Focus without pitch boost: focus sensitivity in Japanese *why*-questions and its theoretical implications

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Abstract

Unlike typical wh-questions, *why*-questions are known to be focus-sensitive, but the linguistic realization of their focus sensitivity shows an unexpected pattern in Japanese. The phrase that immediately follows a causal wh-phrase can be considered as the focus associate without any focal prominence. This prosodic pattern contradicts the generally accepted view that a focused phrase invariably receives focal prominence (pitch boost) in Japanese. The paper presents an analysis based on focus movement for this surprising prosodic pattern. We characterize the focus sensitivity of a *why*-question as an association-with-focus effect with the silent focus exhaustivity operator. The adjacency of a causal wh-phrase and the focus associate is a result of the focus movement to the operator position, which mimics the focus movement proposed by some of the advocates of focus association by movement (Krifka in The Architecture of Focus 82:105, 2006; Wagner in Natural Language Semantics 14(4):297-324, 2006; as reported by Erlewine (Movement out of focus, 2014)). We argue that the adjacency strategy, which places a focus associate immediately after *why*, is a syntactic manifestation of association with focus, and that this structural disambiguation makes prosodic marking unnecessary. The proposal brings a functional perspective to the syntax–semantics–prosody correspondence in such a way that a focus-marked phrase does not automatically lead to prosodic prominence and the phonological interpretation of focus is influenced by the consideration of usefulness.

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1 Introduction

In the majority of natural languages, focused items are assigned prosodic prominence of various kinds (e.g., stress, higher pitch, longer duration), and Japanese is no exception. There are two specific prosodic phenomena that have been reported in connection to focus in Japanese. One is 'focal F_0 rise', in which the pitch (F_0-peak) of a focused item in a sentence is raised. The second process is 'post-focal reduction', a process which reduces the F_0-peaks of the material that follows the focus. Opinions differ on how these effects should be characterized theoretically. In particular, it is hotly debated whether focus prosody in Japanese is derived via phonological phrasing (e.g., Pierrehumbert and Beckman 1988; Nagahara 1994; Truckenbrodt 1995; Selkirk 2006) or a mechanism independent of phonological phrasing (e.g., Poser 1984; Shinya 1999; Féry and Ishihara 2010; Ishihara 2011). At the descriptive level, however, the pitch boost and the prosodic reduction are universally acknowledged as necessary and indispensable ingredients of focus prosody in Japanese. By closely examining the focus sensitivity of *why*-questions in Japanese, we present the first systematic counterexample against this descriptive generalization.

Bromberger (1992) observes that, unlike other wh-interrogative sentences, the interpretation of a *why*-question is affected by focus whereas other wh-questions do not show comparable variability.

(1) a. Why did JOHN buy beer for the party? (A: Because he was the only one who had his ID)
   b. Why did John buy BEER for the party? (A: Because it's everyone's favorite drink)

(2) a. What did ANNA buy in Kyoto? (A: Shoes)
   b. What did Anna buy in KYOTO? (A: Shoes)

(3) a. When did ANNA visit Kyoto? (A: Last month)
   b. When did Anna visit KYOTO? (A: Last month)

As seen in (1), the difference in the location of focus in *why*-questions leads to the different answers. No such effects are found in (2) and (3). The a and b versions may differ in terms of what kind of discourse context they should be asked in, but the answers do not vary. The correct answer to the a question is the correct answer to the b question.[1]

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[1] There is another kind of focalization effect, which is exemplified in (i).

(i) A: Andy left New York because he could no longer afford living there.
     B: OK, now tell me, why did BOB leave New York?

Examples like (i) should be kept apart from the effects in (1). A case like (i) is more accurately described as an instance of *contrastive topic*, which can be analyzed as a wide-scope focus which out-scopes a question (cf. Constant 2014; Wagner 2012; Tomioka 2010a; 2010b), which results in the meaning paraphrasable as

Japanese can employ a similar prosodic strategy to express the focus sensitivity of *why*-questions, as illustrated below.[2]

(4) a. NAZE/NANDE/DOUSHITE Anna-wa KYOUTO-de Mana-ni
    why/why/how.come   Anna-Top Kyoto-Loc   Mana-Dat
    atta-no?
    met-Q
    'Why did Anna meet Mana in KYOTO?'

    b. NAZE/NANDE/DOUSHITE Anna-wa Kyouto-de MANA-ni atta-no?
    why/why/how.come   Anna-Top Kyoto-Loc Mana-Dat met-Q
    'Why did Anna meet MANA in Kyoto?'

(4a) would prompt such an answer as, 'because both of them wanted to visit Kyoto', whereas one might respond to (4b) with an answer like 'because Mana was the only person who was free that day'. In these examples, the causal wh-phrases are placed sentence-initially and receive focal prominence. The focalization of the causal wh-phrases is not surprising at all, as wh-phrases are assigned focal prominence in constituent questions in Japanese. Their focus associates, *Kyouto* in (4a) and *Mana* in (4b), are not adjacent to the wh-phrases, and they are also prosodically marked by raised pitch. In other words, the prosodic manifestation of focus association in (4ab) shows the same pattern as focus-sensitive *why*-questions do in English.

There is, however, another strategy to express focus sensitivity in a Japanese *why*-question: a causal wh-phrase is placed immediately before its focus associate. In (5ab) below, for example, the phrases immediately following the causal wh-phrase (underlined) are regarded as the focus-associates.

(5) a. Anna-wa NAZE/NANDE/DOUSHITE <u>Kyouto-de</u> Mana-ni atta-no?
    Anna-Top why/why/how.come   <u>Kyoto-Loc</u> Mana-Dat met-Q

    b. Anna-wa Mana-ni   NAZE/NANDE/DOUSHITE <u>Kyouto-de</u> atta-no?
    Anna-Top Mana-Dat why/why/how.come   <u>Kyoto-Loc</u> met-Q
    'Intended: Why did Anna meet Mana in KYOTO?'

(6) a. Anna-wa NAZE/NANDE/DOUSHITE <u>Mana-ni</u> Kyouto-de atta-no?
    Anna-Top why/why/how.come   <u>Mana-Dat</u> Kyoto-Loc met-Q

Footnote 1 continued 'as for BOB, why did he leave New York?' Unlike (1), this type of focalization strategy is not limited to *why*-questions.

(ii) A: Andy endorsed Jones for the council position.
    B: OK, now tell me, who did BOB endorse?

It is also worth noting that in the Japanese translations of these questions, the focalized phrases are marked with the topic marker *wa*, as noted in Tomioka (2010a). On the other hand, focus associates of *why*-questions in Japanese are never *wa*–marked, which indicates that the phenomenon exemplified in (1) is not a contrastive topic.

[2] In all the Japanese examples in the paper, the focus associates are lexically accented words, and their focus prominence, when it is present, is indicated by the capitalization of the words.

      b. Anna-wa Kyouto-de NAZE/NANDE/DOUSHITE <u>Mana-ni</u>   atta-no?
         Anna-Top Kyoto-Loc why/why/how.come   Mana-Dat met-Q
         'Intended: Why did Anna meet MANA in Kyoto?'

Just as is the case in (4), the wh-phrases in (5) and (6) must bear focal prominence. What is noteworthy, however, is that the focus associates (indicated by <u>underline</u>) need not be assigned any noticeable pitch boost. In other words, by virtue of immediately following *why*, a phrase can be regarded as the focus associate, and prosodic marking is unnecessary. Despite the lack of prosodic prominence, these questions elicit focus-sensitive answers as (4ab) do. The question naturally arises whether pitch boost is merely unnecessary or is actually prohibited. The answer to this query is rather nuanced and complicated, so we will postpone the discussion of optionality of pitch boost until Sect. 3.2.

Incidentally, Korean shows practically identical patterns. When the causal wh-phrase, *way*, is at the beginning of a sentence, its non-adjacent focus associate is marked with focal prominence.

(7)   a. WAY ne-nun   MINA-eykey cangmi-lul cwu-ess-ni?
         why you-Top Mina-Dat   rose-Acc give-Past-Q
         'Why did you give roses to MINA?'
      b. WAY ne-nun   Mina-eykey CANGMI-lul cwu-ess-ni?
         why you-Top Mina-Dat rose-Acc   give-Past-Q
         'Why did you give ROSES to Mina?'

It is, however, more commonplace to use the adjacency strategy like the one employed in Japanese—*way* is placed immediately before the phrase that functions as *way*'s focus associate (<u>underlined</u> below). Importantly, focus prominence can be absent.

(8)   a. Ne-nun WAY <u>Mina-ekey</u> cangmi-lul cwu-ess-ni?
         you-Top why <u>Mina-Dat</u> rose-Acc   give-Past-Q
         'Why did you give roses to MINA?'
      b. Ne-nun Mina-eykey WAY <u>cangmi-lul</u> cwu-ess-ni?
         you-Top Mina-Dat   why <u>rose-Acc</u> give-Past-Q
         'Why did you give ROSES to Mina?'

While the observation remains impressionistic, it appears that Korean patterns together in terms of making use of both prosody and adjacency in expressing focus sensitivities in *why*-questions. With this note, we will focus on the data from Japanese in the remainder of the paper.

The puzzle of the absence of pitch boost carries over to two of the focus-driven syntactic constructions. Kawamura (2007) notes that a causal wh-phrase and its focus associate can be placed together in the pivot (focus) position of the cleft construction, as shown below.

(9) a. [Anna-ga Mana-ni atta-no]-wa NAZE Kyouto-(de)-na-no?
　　　 Anna-ga Mana-Dat met-NML-Top why Kyoto-(Loc)-Cop-Q
　　　 'Intended: Why was it in KYOTO that Anna met Mana?'

　　 b. [Anna-ga Kyouto-de atta-no]-wa NAZE Mana-na-no?
　　　 Anna-ga Kyoto-Loc met-NML-Top why Mana-Cop-Q
　　　 'Intended: Why was it MANA that Anna met in Kyoto?'

There is one important point that Kawamura leaves unmentioned: As was the case in the 'in-situ' adjacency strategy examined earlier, focal prominence falls on *why* but not on the focus associate.[3]

Even more surprisingly, the same prosodic pattern is found with elliptical *why* questions, which, at least superficially, resemble what Yoshida et al. 2015 call *why stripping*.

(10) Context: Professor Jones announced that she has decided to choose Anna as her new RA over Maria, who many believe is the more qualified of the two. Then, someone asks:

　　 a. Why ANNA?

　　 b. Why not MARIA?

In Japanese, there are two variants of elliptical *why*-questions: One involves the copula *-da*, which takes the form of *na/ja* in the examples below.

(11) The same context as in (10):

　　 a. NAZE Anna na-no/na-wake?
　　　 [why Anna] copula-Q/copula-reason
　　　 'Why Anna?'

　　 b. NAZE Maria ja-nai-no/ ja-nai-wake?
　　　 [why Maria] copula-Neg-Q/ copula-Neg-reason
　　　 'Why not Maria?'

As was the case with the cleft examples above, the wh *naze* receives focal prominence while the stranded *Anna* and *Maria* do not.

In the other type of elliptical *why*-question, predicative elements are absent altogether, and the focus associate retains the case particle. In the example below, the case particle is the accusative *-o*, which would be the choice for the presumed verb *eran-da* 'choose-Past'.

(12) NAZE Anna-o?
　　　 why Anna-Acc
　　　 'Why Anna?'

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[3] Kawamura (2007) argues that the adjacency relation between *why* and its focus associate in the cleft construction is a consequence of constituency between the two phrases. Kawamura's argument will be closely examined in Sect. 4, and for the time being we will stay descriptive and continue to refer to it as the adjacency effect.

The prosodic pattern is the same as the first type. Focal prominence falls on *naze* but not on *Anna*.

In Yoshida et al. ([2015](#)) analysis, the focus marking on the associate of *why* is critical. In ([10](#)), the focalized *Anna / Maria* move to the left periphery, and the syntactic structure below it undergoes ellipsis. Given that the Japanese counterparts have exactly the same discourse function, it is natural to assume that the same focus marking is involved in ([11](#)ab) and ([12](#)). Unlike their English counterparts, however, none of the Japanese elliptical *why*-questions show focal prominence on the focus associates.

The prosodic patterns of *why*-questions in Japanese (and Korean as well) are puzzling and surprising. First of all, the interpretation of a *why*-question in Japanese is just as focus-sensitive as that of an English *why*-question. Moreover, Japanese can express the focus sensitivity in the same way as in English: by appealing to the usual prosodic marking for focus (e.g., [4](#))). However, the languages have another way of establishing the focus sensitivity, and this second method, which we call the adjacency strategy, expresses the required focus association merely by placing the focus associate immediately after *why* (e.g. [5](#))). The two radically different strategies seem functionally equivalent. The two focus-driven syntactic constructions also show a surprising pattern in connection with *why*. When a focus associate appears in the pivot position of a clefted *why*-question or is the focused phrase in a *why*–stripping instance, the associate immediately follows *why*, and the expected focal pitch accent on the associate is also missing.

We believe that the focus sensitivity in *why*-questions is not a small glitch in the system but presents a big challenge to the general theory of focus marking in Japanese. What is the source of the adjacency effect, and how does it affect the prosodic marking of focus in the way that makes it unnecessary to assign pitch boost, which is otherwise so predictably present?

2 Focus–sensitivity and exhaustivity

As the first step towards an analysis, let us examine the nature of focus sensitivity in a *why*-question. Assuming that the semantics/pragmatics of focus sensitivity in a *why*-question is essentially the same in English and Japanese, we will mostly use data from English. Consider ([1](#)) again, which is repeated as ([13](#)).

(13) a. Why did JOHN buy beer for the party? (A: Because he was the only one who had his ID)

   b. Why did John buy BEER for the party? (A: Because it's everyone's favorite drink)

The answer to the first question must explain not only why John bought beer but also why no other people were involved in the purchase. Similarly, the second does not simply ask why beer was bought by John. It asks for the reason why beer was bought, instead of any other beverage that could have been bought. Similar effects are found in 'free' foci (= foci without overt focus sensitive operators) in declarative sentences.

(14)   a. [JOHN]$_F$ bought beer for the party. ↝ No relevant person other than John bought beer.

   b. John bought [BEER]$_F$ for the party. ↝ John didn't buy any other relevant beverage.

In (14), the location of the focus indicates what kind of question the sentence is construed as an exhaustive answer to. (14a) answers exhaustively to *Who bought beer for the party?* whereas the question of *what (beverage) did John buy for the party?* would lead to an answer like (14b). Declarative sentences and *why*-questions also behave alike in that the implicitly negated meaning can be overly asserted or questioned. Suppose, for instance, that there are only two people, John and Andy, under consideration, as these two men are the ones who went shopping.

(15)   a. [JOHN]$_F$ but not [ANDY]$_F$ bought beer for the party.

   b. Why did [JOHN]$_F$ but not [ANDY]$_F$ buy beer for the party?

Given the interpretive similarity between the two uses of focus, it is an attractive idea to identify the focus-affected meaning of a *why*-question to the exhaustive meaning of focus. One potential complication is, however, that the exhaustivity of a free focus is widely regarded as a conversational implicature and is therefore cancelable, as the following examples illustrate.

(16)   a. [JOHN]$_F$ bought beer for the party. And [ANDY]$_F$ did, too, but only a few cans for himself.

   b. John bought [BEER]$_F$ for the party. Maybe he also bought [WINE]$_F$, but if he did, he may have decided not to bring it to the party.

Cancelability is not easily tested with a *why*-question, but the continuation in (17) seems quite infelicitous.[4]

(17)   Why did [JOHN]$_F$ buy beer ($^{???}$ although I know [ANDY]$_F$ also bought some)?

The first step towards accounting for the unexpected contrast in cancelability is to acknowledge that a *why*-question presupposes the prejacent proposition of *why* (cf. Tomioka 2009).

(18)   Why did Andy go home early last night? →$_{presupposes}$ Andy went home early last night.

When the prejacent of a *why*-question has a focused phrase in it, the focus is computed within the presupposed content. In other words, it is a case of focus embedded within a 'given' constituent. With this understanding of focus in a *why*-question, the resistance to cancelation is no longer surprising.

(19)   a. Suppose that the speaker says the sentence 'why S?', where S contains a phrase that is focused.

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[4] (17) may be felicitous under the interpretation that the speaker is interested in knowing why John bought beer but not in why Andy did. However, such an interpretation is a contrastive-topic reading of the focus prominence, as briefly discussed in footnote 1.

b. If S is uttered as a declarative sentence, it asserts its at-issue content of S and conversationally implicates its exhaustive meaning.

c. The question 'why S?' presupposes the semantic content of S, which means that 'why S?' is most suitably and most likely uttered when the context has already been updated with the at-issue content of S.

d. It is also highly likely that the context has also been updated with the conversational implicature associated with S because, if the implicature was objectionable, the update with it would have been challenged or contested prior to the utterance of the *why*-question.

e. Therefore, it is hard to cancel the exhaustive implicature of the prejacent in a *why*-question.

The given/presuppositional status of the prejacent of a *why*-question raises more issues that are relevant to the current discussion. When the condition is right, the prejacent can be elided altogether, resulting in an elliptical/fragmental *why*-question. It turns out that such a question is also focus-sensitive. Consider the following examples.

(20)   a.   A: $[ANDY]_F$ drove the truck to the store.
             B: Why?
       b.   A: Andy drove the $[TRUCK]_F$ to the store.
             B: Why?

There are two important points in (20). First, elliptical *why* questions are still focus-sensitive, as they 'inherit' the focus marking patterns of the antecedent clauses. Thus, a possible answer to (20a) is 'everyone else was too drunk to drive' while (20b) might get such an answer as 'the other car was out of gas.' Second, the focus sensitivity of an elliptical *why*-question makes it very hard to defend the hypothesis (e.g., the one pursued by Kawamura 2007) that *why* itself is focus sensitive. Romero and Han (2004, footnote 15) point out that a focus sensitive operator, such as *only*, cannot associate into elided contents. In (21), for instance, the antecedent VP contains a focused phrase, but *only* cannot associate with the corresponding focused phrase in the elided VP.

(21)   Maria eats fish on $[FRIDAY]_F$. *Actually, she only does. (Intended: Friday is the only day when she eats fish)

The following paradigm further highlights the impossibility of focus association into ellipsis.

(22)   a.   Maria only wants to speak in $[FRENCH]_F$, and *ANNA also only wants to. (Intended: Anna also wants to speak exclusively in French.)
       b.   Maria only wants to speak in $[FRENCH]_F$, and ANNA also does. (The same intended meaning available.)
       c.   Maria wants to speak in French, and ANNA also wants to.

(22b) shows that focus association can be established under ellipsis if both a focus-sensitive operator and its focus associate are included in ellipsis. (22c) is an acceptable sentence which involves a non-maximal or partial VP ellipsis. Thus, the non-maximal

status of the ellipsis in (22a) cannot be the source of its ungrammaticality. It is due to the failure of focus association between *only* and *French*, which is the intended focus associate in the elided VP. The fact that focus-sensitive interpretations are successfully generated with the ellipitcal *why*-questions in (20) indicates that *why* itself is not creating a focus association. It also hints at the possibility that, if there is a hidden focus sensitive operator in the antecedent clause in A's utterance, it is part of the elided structure.

Interestingly, an elliptical *why*-question can be followed by the version with full-fledged structure. In such a case, the focused constituent in the antecedent clause bears focal prominence again, as illustrated below.

(23) a. A: [ANDY]$_F$ drove the truck to the store.
          B: Why? Why did [ANDY]$_F$ drive it to the store?

      b. A: Andy drove the [TRUCK]$_F$ to the store.
          B: Why? Why did he drive the [TRUCK]$_F$ to the store?

This paradigm presents a new puzzle.[5] On the one hand, an elliptical *why*-question and its overt counterpart seem to ask the same question, and the second question may function as a 'reinforcement' question of some sort. On the other hand, prosodic prominence on the focused phrase is still necessary (or at least highly preferable) when the question is full-fledged.[6] Therefore, the paradigm above presents a challenge to the prominent idea, pioneered by Tancredi (1992), that ellipsis is closely tied to deaccenting/phonological reduction.[7] It is also puzzling from the point of view of 'second occurrence focus'. When a given focused structure is repeated, the second time occurrence of the focused phrase does not receive the kind of prosodic prominence that it does in its first occurrence. While the exact characterization of this second occurrence focus phenomenon is subject to debate (Beaver et al. 2007; Büring 2015;

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[5] The repeated/reinforced question after an elliptical question is not limited to *why*. For instance, the following conversation is natural and easily imaginable: 'I saw Wes Anderson's new movie.' 'When? When did you see it?' Such a sequence is also possible in Japanese.

[6] All the native speakers I consulted choose to place prominence on the same focused phrase as in the antecedent, but some wonder whether the second occurrence receives slightly reduced prominence compared to the first occurrence. The same issue may arise in Japanese. One reviewer reports that under some circumstances, prosodic marking becomes unnecessary even with focus-at-distance cases like (4), and I admit that there may be some speakers who can maximize the contextual cues to obtain the intended effects without assigning strong prominence to the focused phrases.

[7] The pattern observed in (23) is reminiscent of a case of 'sloppy' ellipsis discussed in Schwarz (2000, Chapter 4). The elided VP in the second conjunct in (i) contains another smaller elided VP which yields the sloppy interpretation.

(i) When I SING, you tell me NOT to [$_{VP}$ ~~sing~~], but when I whistle, you DON'T [$_{VP}$ ~~tell me not to whistle~~].

Schwarz (2000) observes that when the elided VPs are pronounced, the smaller VPs ([$_{VP}$ sing] and [$_{VP}$ whistle]) receive prosodic prominence that is indicative of the presence of focus.

(ii) When I SING, you tell me NOT to SING, but when I WHISTLE, you DON'T tell me not to WHISTLE.

Presently we are not certain whether and how the two phenomena are related.

and see Baumann 2016 for overview), second occurrence focus receives significantly reduced prominence.

Although we are not ready to offer a full analysis of this puzzle, it is worth pointing out that the peculiarity of second occurrence free foci is not limited to *why*-questions. In the following example, the second sentence of B still receives focal prominence on the same phrase as the antecedent clause. Note that the second sentence follows the sentence, 'I think *so*', where the anaphora *so* clearly indicates the given and semantically identical status of the clausal complement.

(24)   A: [BILLY]$_F$ committed the crime, right?
       B: Yeah, I think so. I think [HE]$_F$ did it / [BILLY]$_F$ committed the crime.

Thus, a second occurrence free focus retains prosodic prominence at least in some cases. It may be significant that the second occurrence foci in (23) and (24) are uttered by a different speaker from the speaker of the first occurrence foci. Mysterious though these patterns are, they point to the same conclusion that what is involved in a *why*-question is a free focus phenomenon in a given context.

The summary of the discussion so far is shown below.

(25)   a. The meaning detected in a focus-sensitive *why*-question is practically identical to the semantic/pragmatic effect with a free focus. In particular, it is similar to the effect of the focus in a sentence that is used as an exhaustive answer to a relevant question in the context.

       b. The focus in a *why*-question is marked within a given constituent, as the prejacent of *why* is presupposed.

       c. The discrepancy in terms of cancelability of the focus effect between a declarative sentence and a *why*-question is explained by making appeal to the presuppositional character of the latter.

       d. *Why* itself is not a focus-sensitive operator since a fragment *why*-question can still generate a focus-sensitive interpretation.

Opinions differ among researchers on how to encode the exhaustive meaning associated with a free focus. We adopt the view that a free focus is not actually free but is associated with a silent operator; an illocutionary operator (Jacobs 1991; Krifka 1994) or a sentential operator that can be embedded, similar to the the scalar-implicature-inducing exhaustive operator of Fox (2007) and Chierchia et al. 2012. In this paper, we use exh_F, a focus sensitive version of the exhaustive operator (*exh*) of Fox (2007) and Chierchia et al. 2012. The following is the semantics of this operator.[8]

(26) $[\![exh_F \, \alpha]\!] = [\![\alpha]\!]^o \wedge \forall p$, such that $p \in ALT \subseteq [\![\alpha]\!]^f \wedge [\![\alpha]\!]^o \nrightarrow p$, p is false, where $[\![\alpha]\!]^o$ and $[\![\alpha]\!]^f$ stand for the ordinary and the focus semantic values of α, respectively, in the sense of Rooth (1992).[9]

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[8] With the hypothesis that the focus sensitivity of *why* is due to exh_F, a new question arises: why is it not possible to have exh_F in other constituent questions? We will address this question in the Appendix to this paper.

What this operator does is to maintain the ordinary value of its complement and add the meaning that all the non-weaker focus-alternatives to the ordinary meaning are false. As mentioned earlier, the second meaning is a conversational implicature that can in principle be canceled. When (26) is applied to (13ab), it yields (27) and (28), respectively.

(27) a. Why did [exh_F [JOHN$_F$ buy beer] for the party]?

b. ⟦ exh$_F$ [JOHN$_F$ buy beer for the party] ⟧ = John bought beer for the party, and no other relevant propositions of the form 'x bought beer for the party' are true.

c. The paraphrase of (27a): What is the cause/explanation of the proposition that John but no other relevant individuals bought beer for the party?

(28) a. Why did [exh_F [John buy [BEER]$_F$] for the party]?

b. ⟦ exh$_F$ [John buy [BEER]$_F$]] ⟧ = John bought beer for the party, and no other relevant propositions of the form 'John bought x for the party' are true.

c. The paraphrase of (28a): What is the cause/explanation of the proposition that John bought beer but no other beverage for the party?

Let us now think about how the exhaustivity plays out in connection with the meaning of *why*.[10] The lexical meaning of a causal wh-phrase is complex. First, we have a question of what kind of semantic object is quantified in a *why*-question: eventualities, propositions, or some other objects. Another issue is the notion of causation, either in the form of the operator *cause* or something else (e.g., the concept of *explanation*). Since complications of these sorts are not central to our current concern, I will remain neutral with regard to these issues. What I would like to concentrate on is the focus-sensitivity of a *why*-question, and our discussion so far indicates that it is not directly encoded within the meaning of *why* but is rather due to the presence of exh_F. We argue that the focus–sensitivity of *why* is derived by the presence of the exhaustive operator exh_F in its immediate scope.

(29) [$_{CP}$ Why [exh_F [.........]]]?

In other words, when a *why*-question has a focus sensitive interpretation, the exhaustive operator is necessarily projected right below the causal wh-phrase.[11]

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[9] Since I will later adopt a movement theory of focus association, the semantic type of the exhaustive operator will be different from the sentential operator version of it. See Section 3.1 below.

[10] Kawamura (2007) proposes a different analysis of the exhaustivity based on the event-semantic partition inspired by Herburger (2000). Her account treats *why* itself as a focus sensitive expression, but the discussion of fragmental *why*-questions earlier in this section has revealed that such an analysis is inconsistent with the generalization concerning focus-containing ellipsis. Kawamura's solution also requires some mechanical tools which are not independently motivated. On the other hand, an account based on exhaustivity associated with focus is consistent with the generalization of focus-containing ellipsis and requires no ad hoc machinery.

[11] There are a couple of issues that arise with the proposal. First, what happens if a causal wh-phrase undergoes movement? Does exh_F move along with it? The assumption here is that the two elements are

3 Focus association

3.1 Association by movement

In Rooth (1985; 1992), the association between a focus-sensitive operator and its focus associate is established 'in situ'. Particularly relevant are cases where an operator and its associate are physically separated, as in (30).

(30)   a.   Anna only talked to MARIA at the party.
       b.   Anna only read Das Kapital because MARIA did.

Roughly speaking, the computation of the meaning of (30a) goes as follows. The focusing on *Maria* leads to the focus semantic value, which is a non-singleton set of entities including Maria. This set meaning 'percolates up' to the VP level, where the focus semantic value of the VP is a set of properties of the form 'talked to x at the party'. With the adverb *only* combined with that set meaning, the denotation of the whole sentence is the proposition that for all x, if Anna talked to x at the party, x is Maria. Crucially, no movement of the focused element is assumed. One of the presumed advantages of the in-situ theory of focus association is that no additional assumptions are necessary to analyze cases like (30b) where a focus associate is embedded within a syntactic island.

Although Rooth's in-situ theory of focus association is adopted by many (e.g., Kratzer 1991; Wold 1996 among others), it is not universally endorsed. An alternative idea that appeals to LF movement has a number of advocates, including Tancredi (1990; 2004); Drubig (1994); Wagner (2006); Krifka (2006); Erlewine (2014); Erlewine and Kotek (2018). These authors point out that the lack of island effects, a major advantage of the in-situ theory, can be accommodated within a movement theory if we assume that an island as a whole moves in a pied-piped fashion. Wagner (2006) argues that association by movement can account for the NPI licensing patterns that the in-situ theory fails to, and Erlewine and Kotek (2018) present evidence in favor of movement based on bound variable interpretations in the *Tanglewood* sentences, with which Kratzer (1991) originally endorsed the in-situ theory with designated variables and distinguished assignments.

For the purpose of this paper, it is sufficient to acknowledge that association by movement is at least a possible strategy. I therefore adopt the position that the LF movement option is available for *why*-questions in which *why* and its focus associate are physically apart. Strictly speaking, a focused phrase does not move to the position

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Footnote 11 continued

always local to each other both at Spell Out and LF. Thus, if *why* moves, exh_F should also dislocate to stay close to *why*. However, it is not clear at this point whether various possible positions of *why* are created by movement or are the consequences of the relative freedom of the locations where *why* can be generated. See Rizzi (2001) and Ko (2005) for relevant discussion. The second issue is whether a *why* question always comes with exh_F. The complement of *why* need not contain a focused constituent. With the sentence, 'Why is the train late?', the speaker is asking for the reason of the train's delay, and this interpretation shows no focus sensitivities. Thus, either exh_F is optional in a *why*-question or exh_F is always present but chooses the negation of the prejacent of *why* as the default alternative when the prejacent has no focus. The obligatory presence of exh_F becomes a trickier issue, however, if it is not a sentential operator, as discussed in the next subsection. I will leave the optionality of exh_F as an open question.

of *why* but rather to the exhaustive operator *exh*, with which the focused phrase makes a constituent.

(31) a. NAZE Anna-wa Mana-ni   KYOUTO-de atta-no?
          why   Anna-Top Mana-Dat Kyoto-Loc   met-Q
          'Why did Anna meet Mana in KYOTO?'

      b. Spell Out: $[_{CP}$ NAZE [exh_F [$_{IP}$ Anna-wa Mana-ni KYOUTO-de atta-no]]]?

      c. LF: $[_{CP}$ NAZE [[exh_F + KYOUTO-de]$_1$ [$_{IP}$ Anna-wa Mana-ni t$_1$ atta-no]]]?

This configuration makes it necessary to make some adjustment to the semantic type of exh_F, as the current assumption that it is a sentential operator does not work under the movement analysis. In the spirit of Wagner's (2006) and Erlewine and Kotek's (2018) proposals for *only*, I propose (32) for the meaning of the movement-triggering *exh*.

(32) $[\![\text{exh}_F\ (\alpha)(\beta)]\!] = [\![\beta]\!]^o([\![\alpha]\!]^o)$ & for all a $\in ALT \subseteq [\![\alpha]\!]^f: [\![\beta]\!]^o([\![\alpha]\!]^o) \not\rightarrow$
      $[\![\beta]\!]^o(a), \neg[\![\beta]\!]^o(a)$

3.2 Association by adjacency

If the desired LF representation of a focus sensitive *why*-question requires the movement of the focus associate, the adjacency strategy that we have observed earlier obtains a new meaning. Such a structure can be regarded as the surface version of the required LF representation. In other words, it is a preemptive move to create at the level of Spell-Out the configuration that is required at LF.[12]

(33) Anna-wa [[NAZE] [[exh_F] [Kyoto-de]$_1$] [Mana-ni t$_1$ atta-no?]

We are now ready to tackle the critical question: Why does this configuration make focal prominence on the focus associate unnecessary? To answer this question, it is useful to compare (33) with the case of association at a distance.

(34) NAZE Anna-wa Mana-ni   KYOUTO-de atta-no?
      why   Anna-Top Mana-Dat Kyoto-Loc   met-Q
      'Why did Anna meet Mana in KYOTO?'

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[12] There remains a question of how the proximity of *why* and the focus exhaustivity operator exh_F is accounted for. One possible way to capture the locality effect is summarized in (i).

(i) a. The sister constituent of the focus-sensitive *why* is a focus phrase (FocP).

     b. The operator exh_F and XP, its focus associate or a phrase that contains the focus associate, form a constituent, and the newly formed constituent moves to the specifier of FocP.

     c. Result: [[why] [$_{FocP}$ [exh_F + [XP]] [$_{IP}$ ....]]].

One reviewer wonders whether *why* and exh_F can ever be separated; in particular, whether it is possible to generate a structure in which *why* is located at the matrix level but exh_F is confined within an embedded clause. This is an intriguing question that we nonetheless are unprepared to address properly.

In this sentence, the focus associate moves to the restrictor position of exh_F at LF. It is practically identical to the LF representation of (33), in which the relevant structure has already been created before Spell Out.[13] In (34), it is of vital importance that the intended focus associate is properly and unambiguously marked in one way or another, as there is more than one candidate for association. In such a situation, focal prominence on the intended focus associate is necessary.

This line of reasoning makes it possible to have a novel look at the realization of focal prominence: It is not a result of automatic 'reading off' of a focus-feature. Rather, the presence of focus-induced pitch boost indicates which phrase is to be the target of the association with a focus-sensitive operator. Therefore, it is reasonable to conclude that focal prominence is unnecessary when the intended focus associate is clearly marked in another way. What is remarkable with the adjacency strategy in (33) is that it has already identified via adjacency which phrase is to be associated with the exhaustive operator. Therefore, there arises no need to mark it prosodically.

It is imaginable, however, that the constituent strategy does not eliminate the need for prosodic marking. The case in point is a focus associate within an island. Consider the following examples.

(35) a. NAZE Anna-wa [[MANA-ga Kyouto-de atta] hito-o]
          why   Anna-Top Mana-Nom Kyoto-Loc met person-Acc
          sagashite-iru-no?
          look.for-be-Q
          'Why is Anna looking for the person(s) that MANA met in Kyoto?'
      b. NAZE Anna-wa [[Mana-ga KYOUTO-de atta] hito-o]
          why   Anna-Top Mana-Nom Kyoto-Loc   met person-Acc
          sagashite-iru-no?
          look.for-be-Q
          'Why is Anna looking for the person(s) that Mana met in KYOTO?'

The location of the focus-induced pitch boost triggers the usual effect. (35a) asks for the reason why Anna is looking for the person that Mana met in Kyoto but not the one that other people met in Kyoto. In (35b), on the other hand, the inquiry is about why Anna is looking for the person that Mana met in Kyoto but not the one that she met in other cities. In these examples, the focused phrases are buried within relative clauses. When the adjacency strategy applies to (35ab), the entire complex NP moves to make a constituent with the focus exhaustivity operator because moving the focused phrases out of those complex NPs islands is not allowed.[14]

(36) Anna-wa [[NAZE] [[exh_F] [[Mana-ga Kyouto-de atta] hito-o]] sagashite-iru-no

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[13] We ignore the difference in the surface positions of the topic-marked *Anna*.

[14] An anonymous reviewer asked whether the movement to exh_F is not just island-sensitive but more restricted in a way that is reminiscent of QR – whether it is clause-bound. The following example, similar to the one presented by the reviewer, suggests that a long distance movement is possible.

   (i) a. Kimi-wa naze Kyouto-de Mari-tachi-ga kekkon-shita-to omotte-iru-no?
           you-top why Kyoto-in   Mari-PL-nom marry-did-Comp think-be-Q
           'Why do you think that Mari (and her spouse) married in KYOTO?'

In this configuration, however, focal prominence is still necessary to distinguish the two readings that correspond to (35ab). Therefore, the focal prominence on the focused phrases is retained, as shown below.

(37) a. Anna-wa [NAZE [[MANA-ga Kyouto-de atta] hito-o]]
          Anna-Top why   Mana-Nom Kyoto-Loc met person-Acc
          sagashite-iru-no?
          look.for-be-Q
          'Why is Anna looking for the person(s) that MANA met in Kyoto?'

      b. Anna-wa [NAZE [[Mana-ga KYOUTO-de atta] hito-o]]
          Anna-Top why   Mana-Nom Kyoto-Loc   met person-Acc
          sagashite-iru-no?
          look.for-be-Q
          'Why is Anna looking for the person(s) that Mana met in KYOTO?'

The retention of the focal prominence is also observed in the cleft counterparts of (37ab). This is predicted because the need of prosodic marking for disambiguation is present in the cleft sentences as well.

(38) a. [Anna-ga   sagashite-iru]-no-wa   [NAZE [[MANA-ga Kyouto-de atta]
          Anna-Nom look.for-be-NML-Top why   Mana-Nom Kyoto-Loc met
          hito]]   na-no?
          person copula-Q
          'Why is it the person that MANA met in Kyoto that Anna is looking for?'

      b. [Anna-ga   sagashite-iru]-no-wa   [NAZE [[Mana-ga KYOUTO-de
          Anna-Nom look.for-be-NML-Top why   Mana-Nom Kyoto-Loc
          atta] hito]]   na-no?
          met   person copula-Q
          'Why is it the person that Mana met in KYOTO that Anna is looking for?'

Let us now look at cases of the adjacency strategy where the focus associate is prosodically focalized. The following sentences would sound more natural without focal prominence on the associates but are certainly not unacceptable.

Footnote 14 continued

   b. Embedded scope for *why*: What do you think is the reason for Mari and her spouse's marrying in KYOTO (rather than any other relevant city)?

   c. Matrix scope for *why*: What is the reason for your thinking that Mari and her spouse married in KYOTO (rather than any other relevant city)?

The ambiguity is structural: *naze Kyouto-de* can be either inside or outside of the embedded clause. The sentence is indeed ambiguous (although the matrix reading is easier to obtain if the matrix verb is changed to *omou-no* 'think-Q' without the progressive marker). This indicates that a focused phrase can move out of an embedded clause to exh_F in the matrix clause. It is consistent with the fact that the cleft formation can be long-distance. The reviewer further asks whether this ambiguity has impact on the prosody, in particular whether placing focus prominence on *Kyouto-de* can elicit one scope reading over the other. The current proposal makes no prediction in this regard, and the empirical facts are unclear, as we have obtained no firm judgments so far. I will leave this issue as an open question.

(39) a. Anna-wa [NAZE KYOUTO-de] Mana-ni   atta-no?
          Anna-Top why   Kyoto-Loc   Mana-Dat met-Q
          'Intended: Why did Anna meet Mana in KYOTO?'

      b. Anna-wa [NAZE MANA-ni] Kyouto-de atta-no?
          Anna-Top why   Mana-Dat Kyoto-Loc met-Q
          'Intended: Why did Anna meet MANA in Kyoto?'

It should be noted that these sentences are still structurally ambiguous. It is unclear from the word order alone whether the exhaustive operator below *why* and its focus associate form a constituent or not. For instance, the following is a possible structure.

(40) Anna-wa [[NAZE] [[exh_F] [Kyouto-de Mana-ni atta-no?]]]

In this configuration, the focus associate is not specified structurally, as the exhaustive operator and the intended focus associate do not form a constituent on the surface. In the prosodically marked versions we see above, the intended associates may be marked with focal prominence in order to resolve this indeterminacy. We can see this effect even when the causal wh-phrase is placed in a post-subject position. It seems possible, though perhaps not very natural or common, to have a long distance association with a non-adjacent phrase as long as it is focused.

(41) [?]Anna-wa NAZE   Kyouto-de MANA-ni atta-no?
          Anna-Top why/why/how.come Kyoto-Loc Mana-Dat met-Q
          'Intended: Why did Anna meet MANA in Kyoto?'

    The degree of unnaturalness increases with the clefted and the elliptical *why*-questions.

(42) a. [???][Anna-ga Mana-ni   atta-no]-wa   NAZE KYOUTO-(de)-na-no?
          Anna-ga   Mana-Dat met-NML-Top why   Kyoto-(Loc)-Cop-Q
          'Intended: Why was it in KYOTO that Anna met Mana?'

      b. [???][Anna-ga Kyouto-de atta-no]-wa   NAZE MANA-na-no?
          Anna-ga   Kyoto-Loc met-NML-Top why   Mana-Cop-Q
          'Intended: Why was it MANA that Anna met in Kyoto?'

(43) Context: Professor Jones announced that she has decided to choose Anna as her new RA over Maria, who many believe is the more qualified of the two. Then, someone asks:

      a. [???]NAZE ANNA na-no/na-wake?
          [why   Anna] copula-Q/copula-reason
          'Why Anna?'

      b. [???]NAZE MARIA ja-nai-no/   ja-nai-wake?
          [why   Maria] copula-Neg-Q/ copula-Neg-reason
          'Why not Maria?'

    c. ???NAZE ANNA-o?
        why   Anna-Acc
        'Why Anna?'

The degradation in these examples is predicted under our need-based theory of focal prominence. Unlike the sentences in (39), there is no ambiguity as to which phrase is the focus associate of the focus exhaustivity operator.

    To sum up, we have identified the cause of the lack of focal prominence on focus-associates under the constituent strategy. Focus prominence is used to identify which phrase should be associated with the exhaustive operator when the phrase is placed at a distance. The adjacency option makes this need disappear when the focus associate is already structurally identified.

4 On clefted *why*-questions: Constituency or adjacency?

One issue highlighted by the cleft construction is Kawamura's (2007) claim that *why* and its focus associate form a syntactic constituent; and, for her analysis, the facts in the cleft sentences are critically important. As shown earlier in (9), a causal wh-phrase and its focus associate can together sit in the pivot (focus) position of the cleft construction. This fact itself cannot determine whether the two phrases form a constituent or are merely adjacent, as Japanese allows more than one phrase to be clefted in the so-called multiple cleft construction. Kawamura's argument is based on the case-marking patterns of the focused phrases. When a direct object with the accusative *-o* is clefted, the object can either drop or retain *-o*.

(44) [Tarou-ga   happyousuru no]-wa sono ronbun(-o)-da
      [Taro-Nom present   C]-Top that paper-Acc-Cop
      'It is that paper that Taro is going to present.'

This optionality is also observed in a clefted *why*-question, as shown below.

(45) [Tarou-ga   happyousuru no]-wa naze sono ronbun(-o) na no?
      [Taro-Nom present   C]-Top why that paper-Acc be Q
      'Why is it that Taro will present THAT PAPER?'

However, when two phrases are clefted in the multiple cleft construction, the case particles must be retained.

(46) [Tarou-ga   happyousuru no]-wa 10-gatsu*(-ni) sono ronbun*(-o) da.
      [Taro-Nom present   C]-Top October-in   that paper-Acc be
      'It is in October, that paper, that Taro will present.' = Kawamura (2007, p.199, (62))

Kawamura concludes that the possibility of case marker drop in (45) is evidence for the constituency of *why* and its focus associate.

    The proposal advocated in this paper does not assume constituency for *why* and the focus associate. The causal wh-phrase and the focus associate are merely adjacent.

Although syntactic constituency is also highly relevant, it is the invisible exhaustive operator, exh_F, that forms a constituent with the focus associate. The adjacency between *why* and the focus associate is due to the adjacency between *why* and exh_F. Thus, the case-marker drop phenomenon reported above is surprising for the current analysis.

We suggest, however, that the problem can easily be solved within the syntactic structure assumed by our analysis. First of all, it is not clear at all whether *why* has undergone movement. For instance, the following example, though it sounds slightly odd, is definitely acceptable.

(47)   Naze [Tarou-ga   happyousuru no]-wa sono ronbun(-o) na no?
       why [Taro-Nom present   C]-Top that paper-Acc be Q
       'Why is it that paper that Taro will present?'

In this example, *naze* takes the entire clefted sentence as its complement. Therefore, it is not the case that the adjacent option is the only version of clefted *why*-questions.[15] The important point that we can draw from (47) is that there is no reason to believe that the structure in (45) involves the clefting of *why* (along with the focus associate). Instead, it could have been created by inserting *why* into the clefted sentence, and the pre-pivot position is one of the locations where *why* can appear.

The term 'insertion' may be a little misleading, as it sounds as if we had to appeal to a generalized transformational approach. The following is a way to account for the appearance of *why* in the pre-pivot position. To illustrate, we adopt the mono-clausal analysis of cleft sentences by Hiraiwa and Ishihara (2012). A summary of their analysis is given in (48).

(48)   a.   The clausal architecture is $[_{TopP} [_{FocP} [_{FinP/CP} [_{TP}]]]]$.
       b.   The morpheme *no* is Fin^0.
       c.   A focused phrase within the FinP moves to Spec FocP.
       d.   The remaining FinP undergoes remnant movement to TopP.

What is presented below is an example of the cleft formation: The cleft sentence (49a) is derived from the non-cleft copula sentence (49b).

(49)   a.   Mari-ga   tabeta-no-wa [ringo-o   mittsu]$_F$-da.
            Mari-Nom ate-NO-Top [apple-Acc 3.CL]$_F$-Cop
            'It is (those) THREE APPLES that Mari ate.'
       b.   Mari-ga   [ringo-o   mittsu]$_F$ tabeta-no-da.
            Mari-Nom [apple-Acc 3.CL]$_F$ ate-NO-Cop
            'Mari ate (those) THREE APPLES.'

(50)   a. $[_{TopP} [_{FocP} [_{FinP/CP}$ Mari-ga [ringo-o mittsu]$_F$ tabeta-no]](-da)]

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[15] Incidentally, it is noteworthy that (47) does not require any prosodic marking on the focused phrase *sono ronbun*: it is indeed much more natural not to assign any prosodic prominence to it. It is consistent with the previous conclusion that prosodic marking is done only when there is a potential ambiguity in the location of focus.

b. $[_{FocP}$ [ringo-o mittsu]$_1$ $[_{FinP}$ Mari-ga t_1 tabeta-no]-da]

c. $[_{TopP}$ $[_{FinP}$Mari-ga t_1 tabeta-no-wa]$_2$$[_{FocP}$[ringo-o mittsu]$_1$ t_2]-da]

Applying this model to *why*-questions, we make a few additional assumptions. First, the exhaustivity operator, *exh*, is placed in the specifier of FocP. This also means that the causal wh-phrase adjoins immediately above Focus P (although the cartographic syntax program does not allow adjunction). The input sentence of the clefted why question (45) is shown in (51a) below.[16] The focus associate moves to FocP to form a constituent with exh_F, as in (51b), and the remaining FinP is topicalized, as in (51c).[17]

(51)   a. $[_{TopP}$ [naze $[_{FocP}$ exh_F] $[_{FinP}$ Tarou-ga [sono ronbun-o]$_F$ happyou-suru-no-desu-ka?]]]]

   b. $[_{TopP}$ [naze $[_{FocP}$ exh_F] [sono ronbun-o]$_1$ $[_{FinP}$ T-ga t_1 happyou-suru-no-desu-ka?]]]

   c. $[_{TopP}$ $[_{FinP}$ T-ga t_1 happyou-suru-no-wa]$_2$[[naze] $[_{FocP}$ [exh_F sono ronbun-o]$_1$ t_2]-desu]-ka]

We have shown that it is easily possible to analyze a clefted *why*-question as an ordinary one-phrase clefting structure. The key factor is that *naze* does not undergo any movement. It is placed right above the FocP that contains exh_F in its specifier, which is the target location for the focus movement. This structure makes *naze* and the focused phrase adjacent but not a syntactic constituent.[18] Crucially, it is not an instance of a multiple cleft sentence and should pattern together with an ordinary cleft sentence with respect to the case-marker drop process.[19]

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[16] To this example, the polite copula *desu* and the Q-marker *ka* are added. It is customary in the Japanese syntax literature that the sentence final *no* is regarded as the Q-marker. It should be pointed out, however, that this particle is homophonous with the finiteness marker. It is possible that its use as the Q-marker is derived from the structure *no-desu-ka* where the copula and the true Q-marker are unexpressed. The addition of *desu-ka* is to avoid the issue of the true identity of *no*.

[17] Unlike the exhaustivity of a 'free' focus, the exhaustive meaning in the cleft construction is not conversational, as it is extremely hard to cancel it. While there seems to be a consensus that it is a conventional meaning, its exact nature is still being debated. See Büring and Kriz (2013) for an account that treats it as a presupposition.

[18] An anonymous reviewer suggests that *naze* and the focus phrase may form a 'surprising constituent' in the sense of Takano (2002). While we admit that this possibility cannot be easily dismissed, the examination in the section shows that a constituency is not necessary to account for the pattern observed by Kawamura. Moreover, an analysis based on constituency would require that *naze* itself be a focus sensitive operator that uses the focus semantic value of the focused phrase, but, according to the data examined in Section 2, such an analysis is hard to justify.

[19] Exactly how to account for the case marker drop is still being debated. In Hiraiwa and Ishihara (2012), the case-less version is considered an entirely different construction, which they call *pseudo-cleft*. This construction is a bi-clausal structure in which the presupposed clause is embedded under a nominal projection (DP) headed by *no*. This DP and the focused phrase in the pivot are in a predicational relation, and the material in the pivot is the focus that is exhaustively interpreted. The derivation of the case-less version of (45) is shown below.

5 Fine-tuning the analysis

The analysis proposed for the focus-sensitive *why*-questions in Japanese advocates the view that the syntax-semantics-prosody mapping has a functional factor. Pitch boost associated with focal prominence can be skipped when prosodic information is deemed unnecessary. It turns out, however, that the necessity of focal prominence must be contextualized in connection with another factor. The cleft construction, discussed in the previous section, plays an important role in this regard. In a declarative cleft sentence, the pivot/focus position typically receives focal prominence, as shown below.

(52) [Tarou-ga   ai-ta-gatte-iru   no]-wa NAOYA(-ni)-da
       [Taro-Nom meet-want-appear C]-Top Naoya(-Dat)-copula
       'It is Naoya that Taro wants to meet.'

The current version of the functionalist syntax-semantics-prosody mapping would not predict this prosodic pattern since the pre-copula position is structurally designated as the focus position that is interpreted exhaustively. Unless the entire cleft sentence is regarded as old information, as in the clefted *why*-question in (47), it is necessary to assign focal prominence on the pivot position.

The critical point of (52) is that the pivot, *Naoya(-ni)*, is not only the focus associate of the exhaustivity operator (Exh_F) but also the sentence focus, the notion of focus of the focus–background partition. In other words, *Naoya(-ni)* corresponds to the wh-expression of the Question-under-Discussion (QUD), 'Who does Taro want to meet?'. In this sense, *Naoya(-ni)* is the sentence focus. In addition, its association with the exhaustivity operator (Exh_F) in the cleft makes the sentence the exhaustive answer to the QUD.

On the other hand, the focus of the sentence in a *why*-question is *why* itself. According to Krifka (2001b), a constituent question is partitioned based on the information structural properties: the wh-phrase acts as the sentence focus whereas the non-Wh portion of the question corresponds to the background against which the question is asked. Krifka's idea is also in accordance with our previous assumption that the prejacent of a *why*-question is presupposed, and that focus is marked within the presupposed content. Therefore, a focus associate in a *why*-question is not the sentence focus. It is nonetheless focused because the exhaustivity operator requires a non-trivial focus value for its domain. Therefore, we have the following descriptive generalization for focus marking in Japanese. Let us assume that a phrase whose focus semantic value is not a singleton-set (i.e., the focus value is non-trivial) is F-marked.

(i) a. $[_{TopP}$ [naze $[_{FocP}$ *exh$_F$* $[_{TP}$ $[_{DP}$ T-ga happyou-suru-no] $[_{PredP}$ $[_{DP}$ [sono-ronbun]-desu]]]]-ka]]

     b. $[_{TopP}$ [naze $[_{FocP}$ *exh$_F$* $[_{DP}$ sono-ronbun]$_2$ $[_{TP}$ $[_{DP}$ T-ga happyou-suru-no] $[_{PredP}$ t$_2$ desu]]]]-ka]]

     c. $[_{TopP}$ $[_{DP}$ T-ga happyou-suru-no-wa]$_1$ [naze $[_{FocP}$ *exh$_F$* $[_{DP}$ sono-ronbun]$_2$ $[_{TP}$ t$_1$ $[_{PredP}$ t$_2$ desu]]]]-ka]]

(53) a. An F-marked constituent which serves as a sentence focus receives focal prominence.

  b. An F-marked constituent which is not a sentence focus can be free from focal prominence if the constituent's association with a relevant focus-sensitive expression is syntactically established at the level of Spell Out.

At this point, we are not ready to claim that the generalization in (53) applies to languages other than Japanese (and possibly Korean). As far as English is concerned, it does not seem to hold.[20] As shown below, the focus associate of a focus-sensitive operator, such as *only*, must be prosodically prominent, whether *only* is placed adjacent to its associate or not.

(54) a. Fred only introduced MARIA to Ned.

  b. Fred introduced only MARIA to Ned.

In these examples, however, the notion of sentence focus is also at play. It is likely that *Maria* or *only Maria* is the sentence focus, as either sentence can be an (emphatically) exhaustive answer to the question, 'Who did Fred introduce to Ned?'. One way to shift the sentence focus to some other constituent is to use a cleft sentence. Consider the following pair.

(55) a. It is Fred that only introduced [Maria]$_F$ to Ned.

  b. It is Fred that introduced only [Maria]$_F$ to Ned.

In (55ab), the pivot *Fred* is the sentence focus and receives the most prominent stress. The question is whether *Maria*, which should be associated with *only*, has a secondary but noticeable stress. The judgment is neither clear nor stable, but the tendency is in accordance with the generalization in (53). (55a) requires some degree of prominence on *Maria*, as prosody is the only way to establish the focus association. On the other hand, the same kind of prosody is possible but not required in (55b). The lack of discernible prominence seems more tolerated, which is likely due to the unambiguous structure.

6 Conclusion

In this paper, we have examined the ways in which the focus sensitivity of *why*-questions is expressed in Japanese. Special attention was paid to the adjacency strategy that puts a causal wh-phrase in the immediate proximity of its focus associate, and we have argued for the analysis summarized below.

1. A focus-sensitive *why*-question is furnished with the focus exhaustive operator (exh_F) immediately under the causal wh-phrase. Thus, the question asks for the reason/explanation not only for the ordinary semantic denotation but also for why the alternatives in the focus denotation do not hold.

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[20] I am grateful to Chris Tancredi, who pointed out this problem to me.

2. Following various proposals that advocate LF focus movement in association with focus, it is claimed that the focus associate of *why* moves to form a constituent with the exhaustive operator. In this sense, the relevant focus association is not directly with *why* itself but with exh_F.

3. The focus movement can take place either at LF or before Spell Out. With the former strategy, the focus associate must be identified properly, and focal prominence is a necessary tool for this purpose. If the latter is chosen, however, the identification of the focus associate is done by adjacency. Since it forms a constituent with exh_F, prosodic marking becomes superfluous.

The analysis presented in this paper leads to a novel theoretical interpretation of focus marking. An F-marked phrase does not automatically lead to prosodic prominence. The two strategies of focus association in Japanese *why*-questions do not differ in terms of the context in which the question is felicitously asked. Thus, the semantic status of a focus associate in a *why*-question must be the same in both strategies. Their prosodic realization differs, however, and we argue that it is due to the necessity of prosodic marking: one receives prosodic prominence because it is needed to be identified as the focus associate, and the other does not because the disambiguation process in syntax makes prosodic marking superfluous. In other words, the phonological interpretation of the same feature (focus) is influenced by the practical consideration of usefulness. We are still in search of an effective theory to characterize this generalization. Particularly important is the over-riding effect of sentence focus. Even if syntactic structure unambiguously identifies which phrase is the sentence focus, prosodic prominence on it cannot be eliminated. Such a situation may be better handled by a constraint-based analysis, but regrettably we will have to set it aside for future research.

Appendix: Exhaustivity in Wh-questions [21]

One of the key factors in the proposed analysis in the paper is that a focused phrase in a *why*-question is associated with the exhaustivity operator (exh_F), rather than *why* itself. The fact that other constituent questions are not focus sensitive means that they cannot host exh_F, and one naturally wonders why that is so. This appendix addresses this issue, but we can offer only a preliminary analysis.

In many information-structure-based analyses of wh-questions (e.g., Krifka 2001a), wh-phrases themselves are regarded as foci, and the question of whether there are

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[21] The lack of exhaustive implicatures in constituent questions is discussed in Tomioka (2020).

additional (non-wh) foci in constituent questions is a non-trivial matter. On the one hand, it has been observed that a (non-*why*) wh-phrase and a focus cannot co-occur in some languages. Italian is a well-known case (cf. Rizzi 1997; 2001). In connection with intervention effects in wh-questions, Tomioka (2007) claims that a (non-wh) focus in a wh-question is illegitimate in Japanese, regardless of their surface positions, and Bocci et al. 2018 offer an analysis that unites Italian and Japanese in this regard. On the other hand, English wh-questions can seem to host additional focused items, as in (2), repeated as (56).

(56)   a.   What did ANNA buy in Kyoto? (A: Shoes)
      b.   What did Anna buy in KYOTO? (A: Shoes)

While some have argued for the possibility of a non-wh focus in a constituent question (e.g., von Stechow 1982; Kadmon 2001), the focused phrases in (56) are realized as contrastive topics in the translations into languages in which contrastive topics are easily distinguished from foci (with Japanese being one such language). Whether non-wh foci in constituent questions are unambiguously contrastive topics or not, one fact is clear: focused phrases in constituent questions cannot be interpreted exhaustively. For instance, the question, *who did ANNA meet on Friday?* with focal prominence on *ANNA*, cannot mean 'which person x is such that it is Anna that met x on Friday?'. If this interpretation were available, the following conversation would be well-formed.

(57)   A: Who did ANNA meet on Friday?
      B: She met MARIA.
      C: #That's not quite right because ERICA also met Maria that day.

C's utterance was meant to correct the exhaustivity associated with *ANNA*, but its infelicity indicates that exhaustivity is absent in A's question.

This in turn means that the following structure is not permitted:

(58) $[_{CP}$ Who$_1$ did $[_{TP}$ *exh*$_F$ $[_{TP}$ ANNA$_F$ meet t$_1$ on Friday?]]]

We propose the following descriptive constraint to block (58):

(59)   Focus exhaustivity is not defined for a phrase which includes a wh-trace. Thus, the attachment of *exh*$_F$ to a wh-trace-containing constituent is not permitted.

(48) can differentiate *why*-questions from other wh-questions. It has been suggested (e.g., Rizzi 2001; Ko 2005) that *why* is merged directly into the specifier of CP without leaving any trace within the TP. For instance, the two sentences in (1) have the following LF representation, in which *exh*$_F$ is attached to the TP that contains no wh-traces.

(60)   a. $[_{CP}$ Why did $[_{TP}$ *exh*$_F$ $[_{TP}$ JOHN buy beer]]? $\approx$ Why is it John that bought beer?
      b. $[_{CP}$ Why did $[_{TP}$ *exh*$_F$ $[_{TP}$ John buy BEER]]? $\approx$ Why is it beer that John bought?

As for the source of the constraint in (48), we speculate that it is based on interpretability. Suppose that all wh-phrases have Hamblin-style denotations and are moreover interpreted in situ (via LF reconstruction or the deletion of the higher copy in the Copy-and-Delete theory of movement). There are at least two compositional mechanisms to implement the Hamblin semantics.

(61)　a.　A wh-phrase denotes a set of relevant semantic objects, and its denotation is computed via 'point-wise' functional application (Kratzer and Shimoyama 2002).

　　　b.　A wh-phrase denotes a set of relevant semantic objects, which is identified as its focus semantic value in the dual semantic value system of Rooth (1992). Critically, it itself lacks an ordinary semantic value, and any constituent that contains a wh-phrase also has no ordinary value until it meets a Q-Operator in the derivation (Beck 2006).

Whichever mechanism is chosen, the exhaustivity operator exh_F cannot perform its duty: it is a sentential operator whose prejacent is a proposition. Its contribution to the meaning is to exclude non-weaker alternatives to its prejacent. If we adopt (61a), then, a wh-containing TP denotes a set of propositions, rather than a proposition. Thus, the exhaustification is undefined. The other choice also fails to work for exh_F. If exh_F is attached to a constituent containing a wh-phrase but not the relevant Q-morpheme, the ordinary semantic value of that constituent is undefined. Since exh_F negates all the non-weaker alternatives to the ordinary semantic value, the operation cannot be performed if the ordinary semantic value is undefined.

　　While the proposal explains the lack of focus-related exhaustivity in non-*why* constituent questions, it crucially relies on the assumption that all wh-phrases reconstruct and are interpreted in their original positions. It remains to be seen if this assumption is independently justified.

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