

On *Why*-in-situ in Japanese: Presuppositional Properties of *Why*-Question

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Abstract The aim of this paper is to investigate the difference between *why*-questions and other ordinary *wh*-questions, especially focusing on anti-superiority effects in Japanese. It has been well-known in the literature that Japanese exhibits the anti-superiority effects: multiple *wh*-questions do not allow *naze* “why” to be interpreted as the left-most *wh*-phrase. Previous studies have shown that pragmatic factors largely relate to this phenomenon. Although this line of account has many appealing aspects, little attention has been devoted to the possibility of single-pair reading of anti-superiority constructions. In this paper, I will first focus on a single-pair interpretation of multiple *wh*-questions in Japanese. Then, I will demonstrate that *naze* “why” in Japanese is difficult to co-occur with other *wh*-phrases to begin with, regardless of their word order. It is also shown that several unique behaviors of *why*-question in Japanese are derived from its peculiar presuppositional specification.

1. Anti Superiority Effects in Japanese

It has been well known in the literature that English multiple *wh*-constructions exhibit Superiority Effects, which prohibit a *wh*-phrase from moving over the other *wh*-phrases that are located higher in the syntactic structure. In other words, only the structurally highest *wh*-phrase can be fronted, and others stay in situ.

- (1) a. Who bought what? (Richards (1997:46))
b. *What did who buy? (*ibid.*)

- (2) a. What_i did you give t_i to whom_j?
 b. ?? Who_j did you give what_i to t_j?

(Cheng and Demirdash (1990:29))

For example, the *wh*-subject *who* in (1) is located higher than the *wh*-object *what* before the *wh*-movement. Therefore, *who* can be fronted to the sentential initial position but *what* cannot. The same holds for the examples in (2). Similar to English, in Bulgarian and Chinese, multiple *wh*-question also obeys the Superiority effects. (see Rudin (1988) and Bošković (1998) for the observation of a cross-linguistic variation with respect to the superiority effects).

On the other hand, Japanese multiple *wh*-questions do not exhibit the Superiority effects; instead, the *wh*-phrases are freely ordered as illustrated in (3) and (4).

- (3) a. Dare-ga nani-o katta no? (Grohmann (2003:101))
 who-nom what-acc bought Q
 ‘Who bought what?’

- b. Nani-o_i dare-ga t_i katta no? (Grohmann (2003:103))
 what-acc who-nom bought Q
 ‘Who bought what?’

- (4) a. Doko-de nani-o katta no?
 where what-acc bought Q
 ‘Where did you buy what?’
 b. Nani-o_i doko-de t_i katta no?
 what-acc where bought Q
 ‘Where did you buy what?’

In Japanese, *wh*-phrases do not need to be fronted overtly and can remain in situ, which yields the SOV order in (3a) and (4a). In addition, Japanese allows *wh*-scrambling that produces the alternative word orders in (3b) and (4b). Notice here that the sentence in (3b), where the object *wh*-phrase *nani-o* “what-acc” precedes the subject *wh*-argument *dare-ga* “who-nom,” should involve the superiority violation. Nevertheless, the sentence seems to be perfectly acceptable. The multiple *wh*-question with *wh*-adjunct *doko* “where”

in (4b) exhibits the same pattern: object *wh*-argument *nani-o* “what-acc” can move across the structurally higher *wh*-adjunct via scrambling. These empirical observations indicate that there are no superiority effects in Japanese.

Although Japanese allows multiple *wh*-questions rather freely, there is one restriction on the order of the *wh*-phrases. As shown by the paradigms in (5) and (6), the causal adverb *naze* “why” cannot precede other *wh*-phrases. To put it another way, Japanese does not allow the... *naze* ... *wh*... configuration. This phenomenon is referred to as the anti-superiority effects in the literature (Saito (1994), Watanabe (1992), among others).

- (5) a. John-ga nani-o naze katta no (Saito (1994:195))
 John- nom what-acc why bought Q
 “Why did John buy what”
 b. *John-ga naze nani-o katta no (*ibid.*)
 John-nom why what-acc bought Q
 “*What did John buy why”
- (6) a. Dare-ga naze soko-ni itta no (Saito (1994:195))
 who-nom why there-to went Q
 “*Why did who go there”
 b. *Naze dare-ga soko-ni itta no (*ibid.*)
 why who-nom there-to went Q
 “*Who went there why”

The ungrammatical sentences in (5b) and (6b) both include “... *naze* ... *wh*...” configuration. The source of anti-superiority effects in Japanese has been controversial: Watanabe (1992) and Saito (1994) provide the ECP-based account. More recently, Takita and Yang (2014) attribute this phenomenon to the failure of feature valuation of C, assuming the defective feature specification for causal *wh*-adverb *naze* in Japanese (see Takita and Yang (2014) for empirical evidence for the defective feature specification of *why* in Japanese).

In addition to the syntactic account, there is a pragmatic approach to the anti-superiority effects. Bolinger (1987) first noted that multiple *wh*-questions

seem to obey the D-linking requirement of the left-most *wh*-phrase. In multiple *wh*-questions, the set of the referents that stand for the left-most *wh*-phrase must be discursively given to derive the pair-list interpretation. Consider the following paradigms.

- (7) a. It's nice to have all those times scheduled (Itutzun (2023:89))
 but when are you doing what?
 (#..but what are you doing when?)
 b. It's nice to have all those activities ahead of you, (Itutzun (2023:89))
 but what are you doing when?
 (#..but when are you doing what?)

In (7a), the first clause sets *all those times* as a topic in the conversation. In such a situation, the *wh*-phrase referring to time should be fronted. In (7b), the situation is the opposite; now, the entities previously defined in the discourse are activities. Therefore, the *wh*-phrase that stands for the activities is fronted. These observations allow us to establish the following generalization.

- (8) D-linked requirement of the left-most *wh*-phrase.
 The multiple *wh*-questions get a natural pair-list interpretation only when the left-most *wh*-phrases are D-linked.

Extending this observation to Japanese data, Miyagawa (2017) proposes that the anti-superiority effects are the reflection of the D-linked requirement of the leftmost *wh*-phrase. He clarifies that *why* and its cross-linguistical counterparts are generally harder to be presuppositional or D-linked on the independent ground¹. This, in turn, indicates that the *wh*-question including “*naze... wh...*” ordering cannot properly receive a pair-list interpretation.

Given the assumption developed in Miyagawa (2017), let us consider the anti-superiority data in (5), repeated in (9).

- (9) a. John-ga nani-o naze katta no (= (5a))
 John- nom what-acc why bought Q
 “Why did John buy what”

- b. *John-ga naze nani-o katta no (= (5b))
 John-nom why what-acc bought Q
 ‘*What did John buy why’

In (9b), the leftmost *wh*-phrase *naze* “why” cannot satisfy the D-linked requirement since they are inherently non-D-linked. Therefore, the multiple *wh*-question in (9b) cannot receive a pair-list interpretation. On the other hand, the reversed order in (9a) is possible since the *wh*-argument *dare-ga* “who-nom” has the potential to be interpreted as discursively given in a certain context. The same line of reasoning can be applicable to the paradigms in (6). Under Miyagawa’s (2017) analysis, the anti-superiority violation configuration is ruled out as expected due to the violation of the D-linked requirement.

Such a pragmatic account that appeals to the discursive factor seems to be more efficient to explain cross-linguistical anti-superiority data. Recent studies have revealed that the anti-superiority effects are widely observed across languages. For instance, Basque also exhibits the anti-superiority effects, as shown in (10).

- (10) a. Zer erosi duzu zergatik? (Itutzun (2023:89))
 what buy aux why
 ‘Why did you buy what?’
 b. ?Zergatik erosi duzu zer? (ibid.)
 why buy aux what
 ‘Why did you buy what?’

As shown in the paradigms in (10), *zer erosi* “what” can precede the causal *wh*-adverb *zergatik* “why,” but the reversed order is impossible, or at least difficult in Basque. This would indicate that the Basque also does not allow *why*-type elements to be the left-most *wh*-phrase. In addition, Irurtzun (2023) observes that *zergatik* ‘why’ > *zer* ‘what’ ordering becomes acceptable when the *why*-phrase is interpreted as D-linked within a well-defined context.

- (11) Gauza horiek guztiak erosteko arrazoi asko eman dituzu...
 things those all buy.for reason many give aux

‘You gave many reasons for buying all those things’

Q: baina **zergatik** erosi duzu zer?
 but why buy aux what
 ‘but why did you buy what?’

(cf. Irutzun (2023:89))

In (11), the preceding discourse sets up the reasons as a topic of the multiple *wh*-question. In such a situation, *zergatik* “why” can obtain a D-linked interpretation since the candidate for answers to this *wh*-phrase is discursively given. This improvement plausibly suggests that the discourse factor is largely responsible for the anti-superiority constraint on multiple *wh*-constructions.

To sum up this section, we have observed that the anti-superiority effects in Japanese would possibly be attributed to the general property of pair-list reading in multiple *wh*-question (i.e., the D-linked requirement). More concretely, *naze* “why” is inherently non-D-linked and impossible to satisfy the D-linked requirement, which renders the *wh*-question involving “... *naze* ... *wh*...” ordering to be ungrammatical.

However, we must note here that in addition to pair-list reading, Japanese also allows single-pair reading for multiple *wh*-questions, which will be introduced in the next section. If the D-linked requirement is a restriction imposed only for pair-list readings, we can expect a single-pair reading remains to be available even in the sentence with anti-superiority configuration. In what follows, we will reconsider the paradigm of Japanese *wh*-question with *naze*, concentrating on the possibility of single-pair interpretation. Before turning to the main purpose of our discussion, I would like to first examine how Japanese multiple *wh*-questions are construed more closely in the next section.

2. Single-Pair and Pair-List readings

A number of studies have shown that multiple *wh*-questions are often ambiguous in the sense that they may be answered in two ways: pair-list (PL) and single-pair (SP) answers. The former answering pattern identifies a single set of referents that stand for the *wh*-phrases, while the latter gives an exhaustive set of the possible referents corresponding to the *wh*-phrases. For

instance, the question in (12a) might be answered by the sentences in (12b) or (12c).

- (12) a. Q: Who bought what?
 b. A: Mary bought a sweater. (SP-answer)
 c. A: Mary bought a sweater, Jane bought shoes,
 Anne bought a skirt... (PL-answer)
 (cf. Grohmann (2003:101))

In (12b), only a single set of referents is identified, while the exhaustive sets of referents for each *wh*-phrase are listed in (12c).

Although these two answering patterns are logically permitted as an answer to the multiple *wh*-questions, recent studies have shown that a cross-linguistic variations exist regarding the availability of those readings. Suppose here the context that ensures each *wh*-phrase will be associated with a single referent. The *scenario I* in (13) requires a single-pair answer as a following utterance.

- (13) *Scenario I:* John is in a department store and off in the distance sees somebody buying an article of clothing, but he does not see who it is, and neither does he see exactly what is being bought. He goes to a shop assistant and asks:
- a. # Who bought what? (English:*SP)
- b. Dare-ga nani-o katta no? (Japanese: SP)
who-nom what-acc bought Q
'Who bought what?'
- (cf. Grohman (2003:102))

In such an environment, the multiple *wh*-question sounds unnatural in English. On the other hand, Japanese multiple *wh*-questions, such as in (13b), are felicitous. From this fact, we may say that Japanese allows single-pair interpretation of multiple *wh*-questions. In addition, in Japanese, the question in (13b) is also available within the context that forces a pair-list answer, as illustrated below.

- (14) *Scenario II*: Mary sees John finishing off his daily dealings. She sees a bunch of people that she knows walk away and John stacking his leftover merchandise, so she asks him:

Question Dare-ga nani-o katta no? (Japanese: PL)
 who-nom what-acc bought Q
 ‘Who bought what?’

(cf. Grohman (2003:102))

These examples indicate that the Japanese multiple *wh*-question like *Dare-ga nani-o katta no?*² can be utilized as both single-pair and pair-list questions. Taking these facts into consideration, we presumably can draw the following generalization regarding multiple *wh*-questions in English and Japanese:

- (15) Generalization of the availability of pair-list and single-pair readings. English disallows single-pair reading in general, while Japanese allows both single-pair and pair-list readings in multiple *wh*-questions.

As shown above, multiple *wh*-questions allow single-pair and pair-list answers, and there is a cross-linguistical variation with respect to the availability of those readings. What is important for the current discussion is that Japanese multiple *wh*-questions allow both single-pair and pair-list readings in nature.

Before moving on to the discussion on the pragmatic approach to the anti-superiority effects, let us confirm the assumptions we made about the interpretability of multiple *wh*-questions. We speculate here that multiple *wh*-questions remain felicitous unless neither of these two readings would disappear. In other words, one may see the multiple *wh*-questions are judged as ungrammatical only when both of these possible readings disappear. If either of these readings remains available, the relevant question is judged as a grammatical question.

Let us return to the pragmatic account of anti-superiority effects. Miyagawa (2017) assumes that the causal adverb *why* cannot be presuppositional on the independent ground, and this anti-D-linked nature of *why* deprives it of the ability to work as an anchor for the pair-list reading. Consider the paradigms in (16), which involve the anti-superiority configuration.

- (16) a. John-ga nani-o naze katta no
 John- nom what-acc why bought Q
 ‘Why did John buy what’
- b. *John-ga naze nani-o katta no
 John-nom why what-acc bought Q
 ‘*What did John buy why’

The sentence in (16b) does not allow a pair-list answer since the leftmost *wh*-phrase *naze* cannot function as an anchor for the pair-list reading due to its non-D-linked property. On the other hand, the question in (16a) is properly construed as a pair-list question when the leftmost *wh*-phrase is D-linked.

At first glance, the pragmatic account can seemingly capture the grammatical judgments of (16a) and (16b). However, the question that arises here is why the sentence in (16) is completely ungrammatical. Given that Japanese multiple *wh*-questions allow both single-pair and pair-list answers, it is natural to predict that the question in (16) can remain grammatical as a single-pair question. However, this is not the case, as shown by the ungrammaticality of (16b). If the D-linked requirement is a constraint related only to the availability of pair-list reading, we need to offer any other independent factor that rules out the single-pair reading in (16b). In the next section, we will offer some empirical evidence demonstrating that a single-pair reading definitely does not obey the D-linked requirement for the leftmost *wh*-phrases. Then, we will provide a possible reason for the severe deviance of (16).

3. Availability of Single-Pair Readings of Multiple *Wh*-questions.

Unlike previous analyses, we would like to focus on the availability of the single-pair reading for the sentences in (16a) and (16b). As shown above, Japanese allows both pair-list and single-pair readings. The question that arises here is whether the sentences in violation of the D-linked requirement are available as single-pair questions or not. In addition, if a single-pair reading of multiple *wh*-questions does not require the left-most *wh*-phrase to be D-linked, it is also unclear why the multiple *wh*-question with ‘*naze... wh*’ ordering is completely ungrammatical.

There might be two possible explanations for the ungrammaticality of the

sentence in (16b):

- (17) (i) The D-linked requirement for the left-most *wh*-phrases is imposed not only for the pair-list reading but also for the single-pair interpretation. In other words, these two readings will disappear if the D-linked requirements are not satisfied, rendering the sentence ungrammatical.
- (ii) There are two independent factors responsible for the ungrammaticality of the sentence in (16b), one of which makes the pair-list reading of (16b) impossible, and the other rules out the single-pair reading.

In this paper, I will take the approach described in (17ii) based on the empirical observation to be introduced later. More concretely, the D-linked requirement imposes no restriction on the availability of the single-pair reading; instead, other independent factors would be manipulated to exclude them. In what follows, I will provide some evidence in favor of the approach in (17ii).

One empirical evidence for the latter approach comes from the multiple *wh*-question with aggressively non-D-linked *wh*-phrase. As pointed out by Pesetsky (1987), when the *wh*-phrases are accompanied by certain expressions like *the hell* and *on the ground*, they will lose D-linked interpretation. Japanese also has the aggressively non-D-linked marker. The adverb *ittai* roughly corresponds to *the hell* or *on earth* in English. Therefore, the speaker who utters the *wh*-questions like (18) need not presuppose a list of candidate answers.

- (18) a. John-wa **ittai** **nani-o** katta no?
 John-top on.earth what-acc bought Q
 What did John buy?
- b. John-wa **ittai** **doko-ni** itta no?
 John-top on.earth where went Q?
 Where on earth did John go?

Recall here that in Japanese, the ordinary *wh*-phrases are freely ordered as

illustrated in (19): the base order in (19a) and (20a) and the scrambled version in (19b) and (20b) are equally available.

- (19) a. Dare-ga nani-o katta no? (= (3a))
 who-nom what-acc bought Q
 ‘Who bought what?’
 b. Nani-o_i dare-ga t_i katta no? (= (3b))
- (20) a. Doko-de nani-o katta no? (= (4a))
 where what-acc bought Q
 Where did you buy what?
 b. Nani-o_i doko-de t_i katta no? (= (4b))

It is important to note here that all of these questions can receive either single-pair or pair-list interpretations depending on the context where those utterances are embedded. Given this, let us consider the paradigms in (21), where we replace the left-most *wh*-phrases with aggressively non-D-linked ones. The D-linked requirement for the pair-list interpretation cannot be satisfied in such a situation since the left-most *wh*-phrases have anti-D-linked properties. Thus, a single-pair reading would strongly be preferred instead of a pair-list one.

- (21) a. Ittai doko-de nani-o katta no ?
 on.earth where what-acc bought Q
 Where on earth did you buy what?
 b. Ittai nani-o doko-de katta no?
 on.earth what-acc where bought Q
 Where did you buy what?

The questions in (21) are appropriately interpreted as a single-pair question. It is important to emphasize here that although the D-linked requirement fails to be satisfied, the questions in (21) can survive as a single-pair question. This indicates that the D-linked requirement is irrelevant to the availability of the single-pair reading; instead, it is only related to the availability of single-pair readings.

Based on this observation, let us look more carefully into the anti-superiority data in (16b), especially focusing on the availability of a single-pair reading. As indicated above, when we replace the left-most *wh*-phrase with the aggressively non-D-linked one, the relevant question would strongly be in favor of a single-pair answer instead of a pair-list one. We speculate that the same effects can be found in the multiple *wh*-questions with *naze*. Let us consider the paradigms in (22) and (23).

- (22) a. John-ga nani-o naze katta no
 John-nom what-acc why bought Q
 ‘Why did John buy what’
 b. *John-ga naze nani-o katta no
 John-nom why what-acc bought Q
 ‘*What did John buy why’
- (23) a. ??John-ga ittai nani-o naze katta no
 John- nom on.earth what-acc why bought Q
 ‘Why did John buy what’
 b. *John-ga ittai naze nani-o katta no
 John-nom on.earth why what-acc bought Q
 ‘*What did John buy why’

The ungrammatical status of (22b) is not changed even though the left-most *wh*-phrase *naze* is replaced by the aggressively non-D-linked one. This seems to be a natural consequence given that the causal adverb *naze* ‘why’ is inherently non-D-linked regardless of whether the aggressively non-D-linked marker is adjoined or not. Thus, in (23b), the pair-list interpretation is impossible or quite difficult for many speakers. However, as mentioned above, Japanese theoretically allows both single-pair and pair-list reading for multiple *wh*-questions. In addition, we have observed that the D-linked requirement is a constraint responsible only for the possibility of pair-list reading; that is, they are irrelevant to the availability of single-pair interpretation. Given this, the sentence in (23b) should remain available as long as it receives a single-pair interpretation, contrary to fact. Thus, it may be a misunderstanding to think the unavailability of the pair-list reading straightforwardly renders the

derivation with anti-superiority configuration ungrammatical. In other words, the D-linked requirement is not enough to account for why the multiple *wh*-questions involving the "... *naze* ... *wh*..." configuration are entirely unacceptable to such an extent that even a single-pair interpretation disappears. To explain this, we should provide other independent reasons that rule out a single-pair interpretation.

Before moving to the next section, in which I discuss some restrictions on *why*-questions in Japanese, I would like to pay more attention to the paradigms in (21). One curious thing about the anti-superiority examples in (21) is that the sentence in (21b) also becomes ungrammatical when the left-most *wh*-phrase is replaced by the aggressively non-D-linked one. Such an apparent degradation probably suggests that the multiple *wh*-question with *naze* lacks a single-pair reading for some reason. This can also be confirmed by comparing the multiple *wh*-questions in (24) and (25).

- (24) a. Ittai dare-to doko-ni itta no?
 on.earth who-with where-to went Q
 Where did you go with whom (on earth)?
 b. Ittai doko-ni dare-to dekaketa no?
 on.earth where who-with went Q
 Where did you go with whom?
- (25) a. ??Ittai doko-ni naze John-to deketeta no?
 on.earth where why John-with went Q
 Why did you go where with John?
 b. ??Ittai dare-to naze gakko-ni dekaketa no?
 on.earth who-with why school-to went Q
 Why did you go to school with whom?

Given that the left-most *wh*-phrases are non-D-linked in these examples, a pair-list interpretation would be impossible. However, as noted above, these sentences can still be interpreted as a single-pair question in principle. Indeed, the question in (24a) requires a single set of referents that corresponds to each *wh*-phrase. However, notice here that, as shown in (25), these questions become

ungrammatical if the right-hand *wh*-elements are replaced by *naze*. Again, what is curious here is that not only a pair-list but also a single-pair reading disappear, which renders the sentence unacceptable. This fact is unexpected, considering that the D-linked requirement is irrelevant to the availability of single-pair reading. Given the discussion developed here, we can conclude that multiple *wh*-questions with *naze* do not allow even the single-pair reading when they co-occur with other *wh*-phrases for the first place.

We have demonstrated in this section that the D-linked requirement is not responsible for the possibility of single-pair reading. In other words, such a constraint is insufficient to explain why the anti-superiority construction is completely unacceptable, and additional constraints that rule out a single-pair reading would be required. The key observation in this section is that it is difficult for the causal *naze* “why” to co-occur with other *wh*-phrases in the first place. In the following section, I will provide a possible factor responsible for the ungrammaticality of the paradigms in (23) and (25).

4. Presupposition of *Why*-Questions

We have observed that the multiple *wh*-question with *naze* cannot receive a single-pair interpretation. Under the previous account of anti-superiority effects relying on the D-linked requirement, the impossibility of a pair-list reading is properly captured: the pair-list interpretation of the multiple *wh*-question with “*naze ... wh*” order is not available due to the anti-D-linked properties of *naze*. However, it still remains unclear why the single-pair interpretation also disappears in an anti-superiority environment. In the following, we attempt to show that an additional pragmatic factor operates to rule out the relevant interpretation.

Tomioka (2009) points out that *why*-type questions and other ordinary *wh*-questions are slightly different in the sense that the former requires the *wh*-independent presupposition while the latter has the *wh*-dependent one. It is widely accepted that in a sentence of the form “p, because q,” the truth of p is presupposed. In addition, when the sentence with “p, because q” is embedded under the scope of negation or *yes-no* question, the proposition of p is also required to be true, as demonstrated in (26).

(26) a. It’s not the case that Sue leave early because she didn’t feel well.

- b. Actually, she felt perfectly fine. She left because she was bored.
- c. # Actually, she didn't leave early. She was the last person to leave.

(Tomioka (2009:263))

- (27) a. Did Sue leave early because she didn't feel well?
b. No, she was feeling perfectly well. She was just bored.
c. # No, she didn't leave early, although she felt ill.

(Tomioka (2009:263))

The sentence in (26a) presupposes that Sue left early. (26c) is infelicitous as a following utterance since the presupposition of the conversation is canceled. On the other hand, (26b) is acceptable without any problem. The same holds for the examples in (27). (27c) is difficult, if not impossible, as an answer to the question in (27a) since it cancels the presupposition of the preceding *yes-no* question.

Such a presuppositional properties of because-classes are inherited even by a *why*-question: they also presuppose that the proposition of non *wh*-part is truth.

- (28) Why did Sue leave early? (Tomioka (2009:263))

As is the case with negation and *yes-no* questions, the above question also presupposes the truth of the proposition of non-*wh*-portion "Sue left early". In this sense, in *why*-type questions, the presupposed proposition is completely independent of the value of the *wh*-phrase. Following the terminology introduced by Tomioka (2009), I call this sort of presupposition the *wh*-independent presupposition.

On the other hand, the presupposition of other ordinary *wh*-phrases involves existential quantification. Consider the following example.

- (29) What did Sue buy yesterday? (Tomioka (2009:263))

In contrast to the case of *why*-questions, the *wh*-question in (29) presupposes the proposition like (30a) instead of (30b).

- (30) a. Sue bought something yesterday. (= *wh*-dependent presupposition)
 b. Sue was buying yesterday (= *wh*-independent presupposition)
 (Tomioka (2009:263))

In Tomioka (2009), a presupposition like (30a) is referred to as a *wh*-dependent presupposition.

It is worth noting here that unlike the *wh*-independent presupposition, the *wh*-dependent presupposition involves existential quantification: the existential operator is introduced within the structure and binds variables. The difference between these presuppositions is more outstanding in the downward entailment environment, as illustrated in (31).

- (31) What did no one buy ____ ? (Tomioka (2009:264))
 (32) a. *wh*-independent presupposition: No one was buying.
 b. *wh*-dependent presupposition A:
 No one bought anything. (neg > \exists)
 c. *wh*-dependent presupposition B:
 There is something x that no one bought. (\exists > neg)
 (cf. Tomioka (2009:264))

Obviously, the *wh*-question in (31) does not presuppose that no one was buying. Thus, the *wh*-independent presupposition is not available for (31). As for the *wh*-dependent presupposition, there are scope ambiguities between the quantificational subject *no one* and existential quantifier since they both can have semantic scope. As a result, the *wh*-dependent presupposition allows two possible readings: one is (32b), where the subject *no one* takes scope over the existential quantifier, and the other is (32c), where the existential quantifier takes scope over the subject. Notice here that the former reading of the *wh*-dependent presupposition is essentially the same as (32a) and infelicitous as a presupposition of *wh*-question in (31). On the other hand, the latter reading in (32c) seems to be consistent with what we presuppose with the utterance in (31).

Again, as for the case of *why*-questions, the *wh*-independent presupposition precisely matches what the relevant utterance presupposes even in the

downward entailment environment. Consider the following paradigms.

- (33) a. Why did no one leave early? (Tomioka (2009:264))
 b. No one left early. (*ibid.*)

The *why*-question in (33a) exactly presupposes the *wh*-independent presupposition in (33b).

In addition, intuitively, as for the question “What did Sue buy?” one can properly answer by saying, “She bought nothing” without presuppositional failure. Generally, the *wh*-dependent presupposition, which introduces the variable into the derivation, is considered an epistemic bias. That is, it is uncertain that the speaker and the addressee share the same presupposition. Thus, it can be safely canceled.

On the other hand, the *wh*-independent presupposition of the *why*-question is a genuine presupposition in the sense that it cannot be canceled. When the speaker asks, “Why did Sue leave early?” she or he presupposes Sue left early, and the addressee may also share the same belief. As a consequence, the presupposition of *why*-type questions cannot be canceled.

We have seen that the *why*-type question is peculiar in two respects: Unlike other ordinary *wh*-questions, it requires a full-fledged presupposition that does not include any quantificational elements. Moreover, the presupposition of *why*-question cannot be canceled. Although the difference between the presupposition of the *why*-type question and other *wh*-questions seems to be trivial, this discrepancy seems to be enough to explain the impossibility of co-occurrence of *naze* and other *wh*-phrases in Japanese. Let us reconsider the examples repeated here as (34).

- (34) a. Dare-ga naze soko-ni itta no (= (6a))
 who-nom why there-to went Q
 ‘*Why did who go there’
 b. *Naze dare-ga soko-ni itta no ((= (6b))
 why who-nom there-to went Q
 ‘*Who went there why’

Recall here that the questions in (34b) are unacceptable. We have interpreted this fact to indicate that *naze* “why” cannot co-occur with any other *wh*-phrases. There might be two possible explanations for this incompatibility. One is to assume that the presupposition of the *why*-type question cannot incorporate any other quantificational variables. As we have observed above, the *why*-type question requires the full-fridged presupposition (i.e., *wh*-independent presupposition). Assuming here that *why*-questions in Japanese also exhibit this peculiar presuppositional property. Given this, we may possibly say that *naze* “why” cannot co-occur with any other *wh*-phrases since they do not allow any quantificational element that introduces the operator-variable set to be inserted into the derivation. If the unvalued *wh*-variable is inserted within the presupposition of *why*-questions, the derivation would induce the interpretive crash due to the computational complexity.

The other possibility is to attribute the incompatibility of *naze* and other ordinary *wh*-phrases to the inconsistency of their presupposition: *naze* “why” and other *wh*-phrases basically cannot co-occur within the same clause since they take different types of presupposition. More specifically, the *wh*-independent presupposition for a *why*-question and the *wh*-dependent presupposition for other ordinary *wh*-questions are inconsistent with each other, and consequently, the relevant derivation would crash². I have no sufficient information to determine which of these approaches is more plausible at this stage. I will leave this as a matter for future research.

5. Conclusion

This paper has argued why multiple *wh*-questions with *naze* “why” exhibit the anti-superiority effects in Japanese. Our study is unique in that, in contrast to earlier findings, we especially focus on the availability of single-pair readings of multiple *wh*-questions. More concretely, we employ aggressively non-D-linked marker *ittai* “on earth” to exclude the possibility of pair-list interpretation and then examine whether the resulting sentence is judged as ungrammatical or not. We found that the multiple *wh*-question with *naze* cannot be properly construed in the first place, unless the preceding contextual discourse allows the left-most *wh*-phrase to be D-linked.

The key observation in this paper is that *wh*-questions with *naze* “why” in

Japanese are incapable of accommodating any other *wh*-phrases. To explain this fact, following Tomioka's (2009) insight, we have provided an account that appeals to the peculiar presuppositional property of *why*-questions. More specifically, we suppose that *wh*-questions with *naze* and other ordinary *wh*-phrases involve different types of presupposition, which yields an interpretive crash.

Notes:

1. Miyagawa (2017) provides the evidence to assume *why* and its cross-linguistical counterparts are hardly regarded as presuppositional on the independent ground. See Miyagawa (2017) for more detailed discussion on the non-presuppositional nature of *why*-phrases.
2. Although further research is needed to determine which of these approaches is correct, the latter line of reasoning seems to be more plausible given that other quantificational elements that introduce operator-variable chains, such as universal quantifiers, can safely co-occur with *why*-phrase.

References

- Bolinger, Dwight (1978) "Asking more than one thing at a time," In Henry Hiz, ed., *Questions*, 104-150. Dordrecht: Reidel.
- Bošković, Željko (1998) "On the interpretation of multiple questions," *A Celebration: Essays for Noam Chomsky's 70th Birthday*, ed. by J. Fodor, S. J. Keyser and A. Brand. Cambridge, MA: MIT Press.
- Cheng, Lisa and Hamida Demirdash (1990) "Superiority Violations," in L. Cheng and G. Demirdash eds., *MIT Working Papers in Linguistics*, 13, 27-46.
- Grohmann, Kleanthes. 2003. 'German Is a Multiple *Wh*-fronting Language!', Multiple *Wh*-Fronting ed. by C. Boeckx and K. Grohmann, John Benjamins Publishing Co., Philadelphia, 99-130.
- Irurtzun, Aritz (2021) "Why Questions Break the Residual V2 Restriction (in Basque and Beyond)," *Why is 'Why' Unique? Its Syntactic and Semantic Properties* ed. by Gabriela, Soare, 63-113, Mouton De Gruyter.
- Kensuke, Takita, and Barry Chung-Yu Yang (2014) "On Multiple *Wh*-Questions

- with ‘Why’ in. Japanese and Chinese,” *Japanese Syntax in Comparative Perspective*, ed. by Saito, Mamoru, 206-227, Oxford University Press, New York.
- Miyagawa, Shigeru (2017) *Agreement Beyond Phi*, Cambridge, MA: MIT Press
- Pesetsky, David (1987) “*Wh*-in situ: Movement and Unselective Binding.” *The Representation of (In)definiteness*, eds., by A. G. B. ter Meulen and E. Reuland, 98-129. Cambridge, MA: MIT Press.
- Richards, Norvin (1997), What Moves Where When in Which Language? Unpublished doctoral dissertation, MIT.
- Rudin, Catherine (1988) “On multiple questions and multiple WH fronting.” *Natural Language and Linguistic Theory* 6: 445-502.
- Saito, Mamoru (1994) “Additional *Wh*-Effects and the Adjunction Site Theory,” *Journal of East Asian. Linguistics* 3, 195-240.
- Tomioka, Satoshi (2009) “Why questions, presuppositions, and intervention effects,” *Journal of East. Asian Linguistics*, 18. 4. 253-271.
- Watanabe, Akira (1992) “Subjacency and S-Structure Movement of WH-in-situ,” *Journal of East. Asian Linguistics* 1,255-291.