Miyagawa 2004 MIT ms. This was submitted to a journal earlier, but as I revised it in response to two wonderful reviews, I changed my mind about the basic analysis. The new analysis appears as Chapter 5 of my Linguistic Inquiry Monograph 54 (2010). However, there is a range of material that did not make it to the newer version, so I am making this ms. available with the proviso that there is a newer version of the analysis. S. Miyagawa, October, 27, 2009.

March 2004 DRAFT

THE NATURE OF WEAK ISLANDS*

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ABSTRACT

It is proposed that virtually all properties of weak islands derive from viewing weak islands as Quantifier-Induced Barriers (Beck 1996b). It is shown that by fixing the assumptions about the semantic structure of wh-questions, including *why*, we can account for the ungrammaticality due to weak islands without stipulating some special property of certain *wh*-phrases (*why*) as being an adjunct (in the ECP version) or non-referential (Rizzi 1990). We show that *why* has a special semantic structure (Beck 1996b), and this structure is susceptible to violations of the Quantifier-Induced Barrier in ways that distinguish it from the nominal *wh*-phrases. To confirm our analysis, we also look at Japanese, which has more QUIBs than languages such as English and German.

Keywords: syntax, islands, wh-questions, pair-list interpretation, adjunct wh-phrase,

1. Introduction

Since Ross (1967), the notion of "island" has played a central role in generative grammar.

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*(acknowledgement to be added)

As discovered by Ross, something within an island is prohibited from moving out of the island. Much of the work on movement operations over the last thirty years has addressed the nature of islands and why they block extraction. In turn, islands have been used to diagnose certain operations as movement -- because they are sensitive to islands -- as opposed to instances of simple binding or coreference. There are two general types of islands, "strong" and "weak." A strong island prohibits arguments and adjuncts equally from being extracted from its domain. A relative clause is a typical strong island (Chomsky 1977).

Strong island: relative clause

a. * What$_i$ do [$_{TP}$ you know [$_{DP}$ the author who [$_{TP}$ wrote t_i]]]?

b. * Why$_i$ do [$_{TP}$ you know [$_{DP}$ the man who [$_{TP}$ quit his job t_i]]]?

a is intended as a question that asks about the thing that the author whom you know wrote, but that interpretation is impossible, as indicated by the asterisk. In fact, this sentence has no interpretation that would deem it as a grammatical expression. b is intended to ask the reason why the man you know quit his job, but like the previous question, this interpretation is impossible. Unlike a, this example does have an alternative interpretation that is possible, in which the speaker wants to know the reason why you know the man who quit his job. Of course, this interpretation does not require the question phrase *why* to be interpreted inside the relative clause, so it does not induce an island violation. The widely accepted analysis of strong-island violation is subjacency (Chomsky 1977, 1986), which prohibits an operation from moving an element across more than one bounding node. In English, TP and DP are bounding nodes, and, as we can see, in , the wh-phrase (*what, why*) in fact moves across three bounding nodes, TP, DP, and another TP.

A weak island differs from a strong island in that, as the name implies, it is not completely impervious like a strong island, but it does block extraction of some things. Two typical weak islands are wh-island and negative island. The examples below demonstrate the reason why they are called weak islands: arguments can extract out of a weak island, but not an adjunct.

Wh-island (Chomsky 1977)

a. What$_i$ do you wonder [whether to fix t_i]? ARGUMENT *WH* EXTRACTION

b. *Why$_i$ do you wonder [whether to fix the car t_i]? ADJUNCT *WH* EXTRACTION

Negative island (Ross 1983)

a. Who$_i$ do**n't** you think that John talked to t_i? ARGUMENT *WH* EXTRACTION

b. *Why$_i$ do**n't** you think that John talked to Mary t_i? ADJUNCT *WH* EXTRACTION

Subjacency clearly cannot explain the weak island violations. Subjacency does not distinguish among different types of elements that move, but rather, it requires anything that moves to observe the "no more than one bounding node" locality. On the other hand, weak islands distinguish between arguments and adjuncts, allowing the former to move out, but not the latter.[1]

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[1] Wh-islands sometimes induce a barrier even for arguments. In the following, in which the embedded clause is tensed, there is a subjacency-type of violation that is perceived to range from mild to severe, depending on the speaker.

(i) ??/* What$_i$ do you wonder [whether John bought t_i]?

In this article I will abstract away from this issue and deal with wh-islands as weak islands. A related phenomenon is the well-known prohibition against subject extraction out of wh-islands.

In the Government and Binding approach (Chomsky 1981 and much work of that era), this argument/adjunct distinction was explored extensively, and led to notions such as the Empty Category Principle (Chomsky 1981) and Constraint on Extraction Domain (Huang 1982). In this article I will focus on *why* as the adjunct wh-phrase; later in the article I will also briefly take up the other adjunct wh-phrase, *how*.

2. Rizzi (1990, 1992)

In highly influential work, Rizzi (1990, 1992) applied his notion of Relativized Minimality to weak islands. The idea is that in both wh- and negative-islands, there is an element that prohibits the wh-phrase from undergoing "minimal" movement. In the wh-island, it is the wh-phrase in the lower Spec of CP. Thus, for example, in the wh-island in , the movement that would be appropriately minimal would be for the wh-phrase to move to the position of *whether*, but that position is already taken up by *whether*. In the negative island example, the minimal movement would be to the position occupied by negation. So far, there is nothing to distinguish between arguments and adjuncts . In both, RM is violated. Rizzi (1990, 1992; cf. also Cinque 1990) then brings into the account the notion of (non-)referential chain, which has the purpose of distinguishing between argument and adjunct wh-phrases. The following is taken from Rizzi (1992).

(ii) * Who$_i$ do you wonder [whether t_i bought the book]?

In this article, I will not deal with this problem as well. See Pesetsky and Torrego (2001), who propose an analysis keyed to the nominative Case feature on subjects. Their analysis allows us to separate out this subject extraction problem from the weak island effect.

Differentiating between argument and adjunct extraction (Rizzi 1992; cf. also Cinque 1990, Rizzi 1990)

X can carry a referential index only if it bears an argumental Theta role on some level of representation.

(i) if X, a chain, bears a referential index, the head of the chain only needs to bind the tail;

(ii) if not, the head must govern the tail.

The idea is that arguments and adjuncts differ fundamentally in their referential capabilities. An argument has a referential index by virtue of receiving a theta role. When a chain is formed, as in the case of wh-movement, this "referential" chain has a property that the head of the chain, the moved wh-phrase, needs only to bind the tail of the chain. No locality is therefore required, and, as we have seen, argument wh-phrases may move out of a weak island. This parallels pronouns, which have their own referential index and need not be locally bound. On the other hand, if the chain is formed from an adjunct, by definition it has no theta role, hence it is not referential in the manner Rizzi intends. Such a chain has the property that the head of the chain, the adjunct wh-phrase, must govern its tail, leading to strict locality. This locality prohibits an adjunct chain from violating RM, making it impossible for an adjunct to get out of a weak island. This chain parallels the antecedent-anaphor relation, which observes strict locality.

In this article I will build on Rizzi's approach and develop an articulated theory of weak islands. In his account of weak islands, Rizzi requires two independent notions: (a) the notion of RM, and (b) the notion of (non-)referential chains. Of these, RM is a general property of language. But the (non-)referential notion of chains is introduced essentially to deal with the argument/adjunct distinction. Assuming that something like RM is needed, the question I put

forward is, can the second notion of (non-)referential chains be derived from some independent property of chains? It will argue that it can be. This will allow us to set aside the notion of (non-)referentiality tied to theta roles, leaving only the RM, or something like it, as being necessary to deal with weak island violations.

The starting point of my analysis is the problem:

Problem

Weak island effects show up even with argument wh-phrases.

In order to develop an account that can overcome this problem, it is necessary to make both of Rizzi's notions more precise:

-- exactly what is being violated with weak islands (Rizzi's RM)?

-- exactly what is responsible for the (non-)referential nature of chains?

Once these become clear, we can see if they naturally merge into a unified theory of weak islands. For the first question -- the nature of the weak island violation--, I will propose that the correct notion is what Beck (1995, 1996a, 1996b) calls Quantifier-Induced Barrier. Expanding on Beck's (1996b) approach, I will argue that weak islands are instances of Quantifier-Induced Barriers. This is responsible for the RM effect observed with weak islands. For the second question -- the notion of (non-)referential chains--, I will adopt the results of recent semantic work on wh-chains (e.g., Beck 1995, Cresti 1995, Lahiri 2002), and show that there is, in fact, a syntactic correlate of (non-)referentiality of chains. What we will find is that syntactic chains that are observed to be "non-referential" (or, in the terms of Cresti/Lahiri, "non-presuppositional") are associated with a particular semantic representation that independently has been shown to be susceptible to Quantifier-Induced Barriers. Using Pesetsky's (2000)

modification of Quantifier-Induced Barriers, we will arrive at the nature of weak island violations as those instances in which a Quantifier-Induced Barrier intervenes in a syntactic chain that we define independently as (non-)referential. The notion of referentiality/presuppositionality is sometimes vague or even unreliable. The advantage of the analysis I will present is that even when there is uncertainty about whether a chain is presuppositional or not, the syntactic form reliably reveals the relevant structure, as in the case, for example, of wh-in-situ constructions, which have been shown to be particularly sensitive to Quantifier-Induced Barriers (Beck 1996a, Chen 1991). This allows us to predict whether the chain is susceptible to weak islands or not. And, as we will see, our analysis does not depend on the distinction between arguments and adjuncts.

3. *How many X* and Quantifier-Induced Barrier

I will begin my discussion with the wh-phrase *how many x*, which will help to demonstrate how the overall analysis works. This wh-phrase in certain contexts has ambiguous interpretation (cf. Cresti 1995).

How many people do you think I should talk to?

(i) For what n: there are n-many people x, such that you think I should talk to x.
(outer reading)

(ii) For what n: you think it should be the case that there be n-many people that I talk to?
(inner reading)

The so-called outer reading presupposes the existence of certain people (Lahiri 2002; cf. Cresti 1995). It can be answered, for example, with "I think that you should talk to John, Mary, and Sam," that is, by naming actual people presupposed in the context, as opposed to simply giving

a number. But the inner reading is not associated with such presupposition, so that it is purely a question about a number, and it can only be answered as such ("three people"). What we can observe with *how many x* is that, in one wh-phrase, we see instances of both presuppositional (referential) and non-presuppositional (non-referential) types identified by Rizzi. Note that this difference is a *structural* one. In the presuppositional interpretation, the lower part of the wh-phrase ("n-many people x") is interpreted high in the structure ("for what n: there are n-many people x, ...) while in the non-presuppositional interpretation it is interpreted low in the structure (for what n: you think it should be the case that there be n-many people ....). We thus have the following informal description.

> (At least for some wh-chains), if it is interpreted as presuppositional, all parts of the wh-phrase are interpreted high in the structure, while if it is interpreted as non-presuppositional, some relevant part of the wh-phrase is interpreted low in the structure.

If this distinction between chains that are presuppositional and those that are not corresponds to Rizzi's referential and non-referential chains, we make the prediction that the interpretation associated with presupposition should not be subject to weak islands, while the non-presuppositional one should be. In other words, the interpretation associated with presupposition ought to behave like an argument wh-phrase, while the interpretation without presupposition should behave like an adjunct wh-phrase. This prediction is borne out. As shown below, only the outer reading (presupposed/referential) survives when *how many x* is extracted from a wh-island ((a)) and negative island ((b)). This is an instance of a weak island effect involving an argument wh-phrase.

> The inner reading (non-presuppositional) disappears in weak islands (Beck 1995, Cresti 1995)

a. How many people do you wonder whether I should talk to? (wh-island)

(i) For what n: there are n-many people x, such that you wonder whether I should talk to x.

(ii) * For what n: you wonder whether it should be the case that there be n-many people that I talk to?

b. Wieviele Hunde hat Karl nicht gefüttert? (negative island)

how many dogs has Karl not fed

(i) For which n: there are n dogs that Karl didn't feed.

(ii) * For which n: it is not the case that Karl fed n dogs.

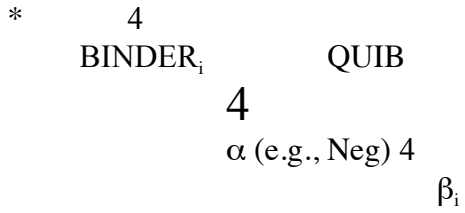
We thus have a concrete way to capture Rizzi's intuition about referentiality and weak islands. It is strictly a structural approach, in which pieces of the wh-chain are located at different points in the structure. Crucially, this is entirely independent of weak islands. Thus, for *how many x*, the fact that it is associated with a presuppositional interpretation if all the pieces are interpreted high, and with a non-presuppositional interpretation if not, is true completely independent of weak islands. If we have a way to exploit this structural difference in the way wh-chains are formed, we achieve our goal of deriving the weak island effects from just one condition. I turn to this condition below.

Beck (1995, 1996a, 1996b) provides extensive discussion of what she calls Quantifier-Induced Barrier. Originally designed to account for the intervention effect induced by negation, she later expands the empirical coverage essentially to all quantification.

Quantifier Induced Barrier (QUIB) (Beck 1996a, Beck and Kim 1997)

The first node that dominates a quantifier, its restriction, and its nuclear scope is a Quantifier Induced Barrier.

The idea is that if a QUIB intervenes in a chain, as in the structure below, it induces a violation.



Beck argues further that the type of chain susceptible to the QUIB is created at LF, by covert movement. This is shown in the following German example.[2]

* Was glaubt niemand, *wen* Karl gesehen hat?
whatbelieves nobody whom Karl seen has
'Who does nobody believe that Karl saw?'

In this direct question, the matrix Spec of CP is occupied by *was*, which means "what" in a normal wh-question, but here, it is something akin to an expletive. The real wh-phrase is *wen* 'whom', which sits in the lower Spec of CP. This wh-phrase must raise at LF to the matrix Spec of C because the entire expression is a direct question, but in this sentence, the negative expression *niemand* induces a QUIB, and prohibits the LF-created chain from forming. If there is no QUIB, as in the example below, the covert movement of *wen* takes place without any incident.

Was glaubt Hans, *wen* Karl gesehen hat?
whatbelieves Hans whom Karl seen has
'Who does Hans believe that Karl saw?'

[2] Examples of this sort were discussed earlier by Rizzi (1992) based on the work of McDaniel (1989).

While I will adopt Beck's approach virtually intact, one assumption I will abandon is the idea that only LF movement is subject to QUIBs. It is easy to see that this stipulation must be set aside if we are to use the notion of QUIB to explain weak islands. At least some weak island effects are induced by overt movement, as in the case of English *why* extraction. I will show later that the QUIB effect is not limited to LF movement.

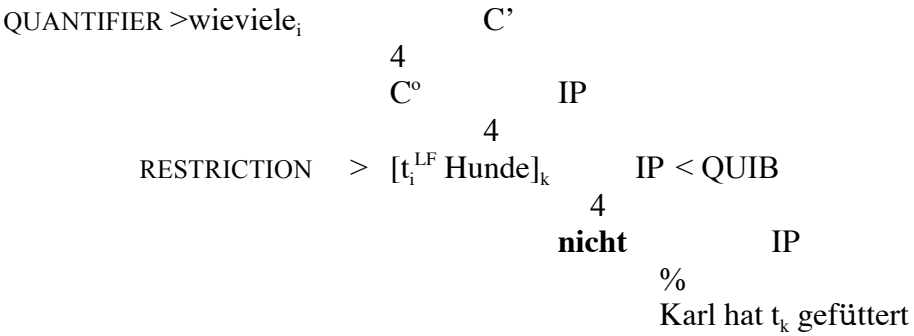
The analysis I will propose in fact mirrors the proposal by Rizzi (1992). He suggests that in the German example in , there is wh-movement, but it is only a small piece, possibly the wh-operator portion, of the wh-phrase *wen* 'whom'. This is the piece that shows up as *was* in the matrix Spec of CP. Because this partial wh-piece is not the entire argument wh-phrase *wen*, Rizzi suggests that this movement is adjunct-like, and hence is subject to the Empty Category Principle. I will not adopt the ECP. Rather, I will show that it is precisely in these environments where the wh-operator gets separated from the rest of the wh-phrase, which I assume to be the semantic restriction, that a QUIB violation occurs.

Turning to *how many x*, the context in which Beck (and Beck and Kim 1997) addresses the QUIB effect is negation (cf.). Recall that in the negative island context, the outer reading (presuppositional reading) is possible, while the inner (non-presuppositional) reading is not. The outer reading is characterized by all parts of the wh-phrase being interpreted high in the structure, above the negation. As we can see below, there is no intervention by the negation because the quantifier, *wieviele*, is completely interpreted above the negation. That is, both the quantifier, *wieviele*, and the restriction, *x Hunde*, occur above negation. The only relevant item below the negation is the individual variable (t_k in the structure below) bound by the wh-phrase.

how many x (from Beck and Kim 1996): outer reading (presuppositional)

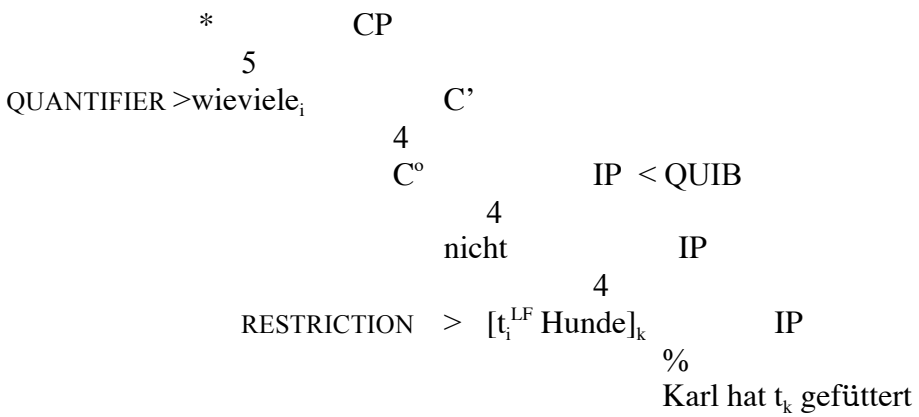
CP

5



In contrast, the inner reading requires that the lower portion of the wh-phrase be interpreted low in the structure -- lower than negation. As expected, this leads to a QUIB effect.

how many x (from Beck and Kim 1996): inner reading (non-presuppositional)



It is natural simply to carry this analysis over to wh-island, thus unifying the analysis of weak island. In fact Cresti's (1995) analysis provides exactly the right characterization. On the basis of Frampton's (1990) work , she argues that no portion of a wh-phrase moved out of a wh-island may be interpreted inside the island. The relevant example is repeated below.

How many people do you wonder whether I should talk to? (wh-island)

(i) For what n: there are n-many people x, such that you wonder whether I should talk to x.

(ii) * For what n: you wonder whether it should be the case that there be n-many people that I talk to?

The relevant structures for the interpretation in (i), which is the "presuppositional" one and one that is available, and the interpretation in (ii), which is the "non-presuppositional" one, are given below.

a. presuppositional

for what n, ... n-many people x....[wh-island .... *x*....]

b. non-presuppositional

**for what n, ...* [wh-island ... *n-many people* ...]

What we must determine is the exact nature of the barrier effect induced by the wh-island. Following Beck (1996a) and Beck and Kim (1997), I will assume that any quantificational element potentially induces a Quantifier-Induced Barrier. Let us suppose that in a wh-island, this is induced by the question morpheme Q that heads the CP of the island.

> Q, which heads the CP in questions, induces a QUIB; hence the CP, which is a QUIB, cannot intervene in a wh-chain in which some portion of the wh-phrase occurs below this CP.

If we follow Karttunen's (1973) proposal that wh-questions have an existential quantifier at Q, it would be natural to point to this existential quantifier as inducing the QUIB in wh-questions. I will assume this to be the case. In the remainder of this article, I will look at Japanese, which turns out to have a large set of expressions that induce a QUIB. In looking at Japanese, we will also see why the adjunct wh-phrase *why*/*naze* is solely associated with the non-presuppositional interpretation, which always subjects it to weak islands.

4. The Apparent Argument/Adjunct Distinction

The analysis of weak islands I presented above makes no specific distinction between arguments and adjuncts. We saw, for example, that *how many x*, which forms an argument chain, nevertheless exhibits weak island violation, but only under one type of reading. Under our QUIB-based approach to weak islands, a chain configured to have a non-presuppositional

interpretation is subject to weak islands. Whether the chain is an argument or an adjunct chain is not the issue, but rather, QUIBs only care about quantifiers and the location of their restrictions.

Some of the clearest cases of QUIB effects are found in languages with wh-in-situ question constructions. In these languages, argument wh-phrases are subject to the QUIB effect. In fact, what I am calling QUIB effects were discovered quite early in Japanese, by Hoji (1985) and Takahashi (1990). Takahashi (1990) shows that the NPI *sika-nai* 'only' blocks extraction of wh-in-situ (see also Tanaka 1999).

* Taroo-*sika* nani-o kawa-nakat-ta no?

Taro-only what-Acc buy-Neg-Past Q

'What did only Taro buy?'

That this appears to be an LF restriction is shown by the fact that if the wh-phrase is scrambled to a position higher than the NPI, the sentence is grammatical (Beck 1996a, Beck and Kim 1996).

Nani-o_i Taroo-sika t_i kawa-nakat-ta no?

what-Acc_i Taro-only t_i buy-Neg-Past Q

Note that the overt movement that scrambles *nani* 'what' across the QUIB, *Taroo-sika* 'Taro-only', is not flagged by the QUIB. The same point is illustrated for Korean below (Beck and Kim 1997).

a. * Amuto mwues-ul ilk-ci-an-ass-ni?

anyone what-Acc read-CI-not-do-past-Q

'Who did no one read?'

b. mwues-ul$_i$ amuto t_i ilk-ci-an-ass-ni?

what-Acc$_i$ anyone t_i read-CI-not-do-past-Q

This QUIB effect with argument wh-phrase is not limited to strictly wh-in-situ languages such as Japanese and Korean. We have already seen that in German, the QUIB effect arises if the matrix Spec of CP is occupied by the "expletive" wh *was*, and the "real" wh-phrase occurs overtly in the lower Spec of CP. The example, from Beck (1996a), is repeated below.

*Was glaubt niemand, *wen* Karl gesehen hat?

whatbelieves nobody whom Karl seen has

'Who does nobody believe that Karl saw?'

The same phenomenon is found in French, which allows the wh-in-situ option in root questions. As Chang (1997) notes, the wh-in-situ option is subject to the QUIB.

a. *? Jean ne mange pas quoi?

Jean Neg eat Neg what

'What didn't Jean eat?'

b. Que ne mange-t-il pas?

what Neg eat-he Neg

In all of these QUIB violations, the wh-phrase, or some relevant portion of it, occurs structurally below C (Q), where presumably the relevant quantification, the existential quantification, for the question resides. Let us focus our attention on the ungrammatical Japanese example, repeated below, along with the grammatical counterpart.

a. * Taroo-*sika* nani-o kawa-nakat-ta no?

Taro-only what-Acc buy-Neg-Past Q

'What did only Taro buy?'

b. Taroo-ga nani-o kawa-nakat-ta no?

Taro-Nom what-Acc buy-neg-Past Q

'What didn't Taro buy?'

What we must clarify is the manner in which a wh-phrase takes scope in Japanese. One approach is the original analysis of wh-in-situ by Huang (1982), who argued that the entire wh-phrase moves covertly at LF. Under this analysis, an LF configuration such as the following, which is roughly what corresponds to the (a) example above, is ruled out.

* what x, x a thing$_i$, QUIB ... x_i ...

On this analysis, we must follow Beck in stipulating that only LF movement is subject to QUIBs. This is because if the wh-phrase in the ungrammatical example above is scrambled to the left of the QUIB, the sentence becomes grammatical. The example is repeated below.

Nani-o$_i$ Taroo-sika t_i kawa-nakat-ta no?

what-Acc$_i$ Taro-only t_i buy-Neg-Past Q

This sentence would have exactly the same LF as , except that it is grammatical, of course. So, there is nothing wrong with a wh-phrase binding an individual variable across a QUIB. The only difference is that in this example, the movement from the original object position is overt, not covert.

The problem with stipulating that only LF movement is subject to QUIBs is that we lose the possibility of unifying weak island effects. One of the basic facts we must capture under a unified approach is the prohibition against extraction of adjunct wh-phrase *why* (and *how*, see

later) from weak islands. This prohibition is on *overt* movement, not covert. If we stipulate that QUIB effects are observed only by covert movement, the prohibition on *why* would have to fall outside the jurisdiction of QUIBs, an unfortunate result. A more promising approach is found in the recent proposals of Watanabe (1992) and Hagstrom (1998). While they differ in important respects, they share the idea that something moves overtly in wh-in-situ questions. Watanabe (1992) argues that a phonetically null wh operator moves to C that has the question . feature Q.

$[_{CP}$ wh_i .....$[t_i$ *nani*] ...] (Watanabe 1992)

What remains in situ, *nani* 'what', corresponds to an indefinite expression (cf. Kuroda 1965), or, what is more commonly referred to as the "restriction." What is crucial is that, although there is overt movement of the wh operator, what remains after the movement is not a simple individual variable.

Hagstrom (1998) has a different perspective on what moves overtly. Focusing on the fact that wh-in-situ languages often have a question particle at the end of the sentence (Cheng 1991), Hagstrom gives arguments for an analysis in which the question particle is an existential quantifier that is merged next to the wh-phrase, then the particle moves overtly to the end of the sentence, to Q. Like Watanabe, what remains in situ is the restriction.

$[_{CP}$.....$[t_i$ *nani*] ... Q_i] (Hagstrom 1998)

Hagstrom provides extensive discussion of how this question-particle movement is subject to QUIBs, an approach I will adopt.

Note that in either Hagstrom's or Watanabe's approach, what remains is the restriction, and not just an individual variable. If a movement is capable of creating a simple individual variable, as presumably in the case of argument wh-phrase extraction, QUIB effect is not induced. So, it isn't that only LF movement is subject to the QUIB, but anytime some portion of a wh-phrase is

left behind under movement, this movement is flagged by a QUIB. This is captured in recent work by Pesetsky (2000).

Intervention effect (universal characterization) (Pesetsky 2000, p. 67)

A semantic restriction on a quantifier (including *wh*) may not be separated from that quantifier by a scope-bearing element.

Pesetsky does not distinguish between covert and overt movements, but rather, between feature and phrasal movements. His idea is that wh-phase-in-situ can undergo either feature or phrasal movement, depending on independent requirements of the language. If feature movement takes place, it is subject to the QUIB because the feature that is moved is the quantificational portion, and what remains is the restriction. He assumes that in Japanese, something like is what occurs at syntax, and if QUIB is violated, it is at this point that the violation occurs. I will assume the Watanabe/Hagstrom approach to wh-in-situ, and Pesetsky's definition of QUIB violation. Thus, the following is ungrammatical, in which the QUIB dominates the restriction.

* wh_i/Q_i ... QUIB ... [t_i *nani*] ....

A question we might ask is, does the restriction raise at LF? Watanabe (1992) assumes so, in order to derive the standard LF for wh questions: what x, x a $thing_i$, ... x_i ..... This seems quite plausible, but then, we are back to wondering if QUIBs only flag LF movement -- in this case, the movement of the restriction at LF to the Spec of CP. On the other hand, if we combine Watanabe/Hagstrom approach with a particular approach to QUIBs developed recently by Pesetsky (2000), we can pursue an analysis in which the QUIB applies to the overt movement of the operator in as proposed by Watanabe (cf. also Hagstrom 1998).

Furthermore, if, in the absence of a QUIB, we say that the restriction may move up to CP, or stay in-situ, we capture the different interpretations -- presupposed (the restriction moves up)

or non-presuppositional (the restriction stays in-situ) -- that linguists such as Cresti (1995) and Lahiri (2002) have observed (see also Aguero-Bautista 1999 for relevant discussion in which some of what Cresti and others have observed is tied to (im)possibility of reconstruction).

4. QUIBs in Japanese

Japanese has a large set of QUIBs, many of them originally discovered by Hoji (1985). An interesting property of QUIBs in Japanese is that, as far as I know, they all involve either of the morphemes *ka* or *mo* (cf. Hagstrom 1998, Miyagawa 1998). The morpheme *ka* occurs most commonly in existential expressions, while the morpheme *mo* occurs in universal expressions. The morpheme *ka* also occurs in the NPI *sika-nai* 'only', which Takahashi (1990) discovered to function as a QUIB. The following lists most common QUIBs in Japanese.

QUIBs in Japanese

QUIBs with -*ka*

a. NPI *sika-nai* 'only' (Takahashi 1990)

* Taroo-si*ka* nani-o kawa-nakat-ta no?

Taro-only what-Acc buy-Neg-Past Q

'What did only Taro buy?'

b. Existential quantifier (Hoji 1985)

??Dare*ka*-ga nani-o katta no?

someone-Nomwhat-Acc bought Q

'Someone bought what?'

c. Disjunction *-ka* (Hoji 1985)

?* [John-*ka* Mary]-ga nani-o katta no?

[John-or Mary]-Nom what-Acc bought Q

'John or Mary bought what?'

QUIBs with universal *-mo*

a. Universal quantifier (Hoji 1985)

?* Dare-mo-ga nani-o katta no?

everyone-Nom what-Acc bought Q

'Everyone bought what?'

b. "Almost every" (Miyagawa 1998)

* Hotondo dare-mo-ga nani-o katta no?

almost everyone-Nom what-Acc bought Q

'Almost everyone bought what?'

Note that the various QUIBs differ in the degree to which they block movement. The NPI *sika-nai* 'only' in a induces a strong intervention effect, while the existential quantifier in b appears only to marginally intrude in the movement of the wh-phrase. The weak intervention of the latter is probably due to the fact that the existential quantifier can have a non-quantifier, specific reading. This is clear with the two examples containing the universal *-mo* in . Speakers vary on the degree of ungrammaticality of a. This is apparently due to the fact that the universal *daremo* 'everyone' can be associated with the non-quantificational group reading (cf. Hoji 1986). By adding the word "almost" in b, the quantificational reading is forced, since there is no group reading with this word added, and, as indicated by the asterisk, the intervention induced by the QUIB is robust. The NPI *sika-nai* 'only' contains the morpheme *ka*, which we have seen induces

a QUIB. Unlike the other "*ka*" expressions, the function of *ka* in *sika-nai* is not at all transparent. Konoshima (1993) states that the etymology of *sika* is not known. I will simply assume that the *ka* in *sika-nai* is at least partially responsible for inducing a QUIB. Finally, there is another candidate for a QUIB that involves *ka*; this is the wh-island, which in English induce a weak island. As we will see in the last section, the wh-island in Japanese involves some complication, in that, unlike in English, it apparently has an escape hatch.

For every one of these QUIBs, it is possible to overtly move the wh-phrase above the QUIB and avoid a QUIB violation. This is a hallmark of QUIBs, as we have seen from Beck's work. The relevant examples are given below.

a. NPI *sika-nai* 'only'

Nani-o$_i$ Taroo-si*ka* t_i kawa-nakat-ta no?

what-Acc$_i$ Taro-only t_i buy-Neg-Past Q

'What did only Taro buy?'

b. Existential quantifier

Nani-o$_i$ dare*ka*-ga t_i katta no?

hat-Acc$_i$ someone-Nom t_i bought Q

'What, someone bought?'

c. Disjunction *-ka* (Hoji 1985)

Nani-o$_i$ [John-*ka* Mary]-ga t_i katta no?

what-Acc$_i$ [John-or Mary]-Nomt_i bought Q

'What, John or Mary bought?'

d. Universal quantifier

Nani-o$_i$ dare-mo-ga t_i katta no?

what-Acc$_i$ everyone-Nom t_i bought Q

'What, everyone bought?'

e. "Almost every"

Nani-o$_i$ hotondo dare-mo-ga t_i katta no?

what-Acc$_i$ almost everyone-Nom $t_i$bought Q

'What, almost everyone bought?'

5. QUIBs and Adjunct Wh-phrase *Naze* 'why'

Let us now turn to the central problem taken up in this article, namely, what is the nature of weak islands? I have argued, using Beck's work, that weak islands are QUIBs. So, the effects we have observed of infelicitous movements in and are violations of a QUIB. But now, we must show that these QUIBs also manifest the stereotypical property of blocking adjunct wh-phrase movement, and we must show that what is blocked is *overt* extraction of this adjunct wh-phrase. If we can show this, we have a complete picture of weak islands as QUIBs.

To test to see if the QUIBs we have identified induce an intervention effect on the overt movement of adjunct wh-phrase *naze* 'why', we must first note one fact about the intervention effect involving English *why*. In all cases of intervention, *why* moves long-distance, to a higher

clause than the one it originates in. A simple example is given with negative island (Ross 1983). In the first example, *why* moves locally, and there is no intervention effect. It is in the second example, in which *why* moves long-distance, with negation in the upper clause, that the intervention effect emerges.

a. Why doesn't Mary come home?

b. * Why$_i$ don't you think [Mary will come home t_i]?

We see the same point with wh-island. *Why*, when it moves from within the wh-island to the higher clause, exhibits the intervention effect. In the next section, I will comment on why a QUIB induces an intervention effect with *why* only in long-distance movement.

Turning to Japanese, we will look at the behavior of the adjunct wh-phrase *naze* 'why'. It is possible to scramble *naze* long-distance, although there is a slight degradation, as indicated by the question mark in parentheses.[3]

? Naze$_i$ Hanako-ga [t_i Taroo-ga sigoto-o yameta to] omotteiru no?

why$_i$ Hanako-Nom [t_i Taro-Nom job-Acc quit C] think Q

'Why does Hanako think that Taro quit his job?'

In sharp contrast, *naze* cannot move across the QUIBs that we have identified.

naze extraction long-distance across QUIB

a. NPI *sika-nai* 'only'

* Naze$_i$Hanako-sika [t_i Taroo-ga sigoto-o yameta to] omottei-nai no?

why$_i$ Hanako-only [t_i Taro-Nom job-Acc quit C] think-Neg-Past Q

[3] Saito (1985) observes that long-distance scrambling of *naze* is unacceptable. However, the example I give of such a long-distance movement has been judged as grammatical by many native speakers, and I will assume that it is basically fine.

'Why does only Hanako think that Taro quit his job?'

b. existential quantifier

?? Naze$_i$ dareka-ga [t_i Taroo-ga sigoto-o yameta to] itta no?

why$_i$ someone-Nom [t_i Taro-Nom job-Acc quit C] said Q

'Why did someone say that Taro quit his job?'

c. disjunctive *-ka*

* Naze$_i$ [John-ka Mary]-ga [t_i Taroo-ga sigoto-o yameta to] itta no?

why$_i$ [John-or Mary]-Nom [t_i Taro-Nom job-Acc quit C] said Q

'Why did John or Mary say that Taro quit his job?'

d. universal quantifier

?* Naze$_i$daremo-ga [t_i Taroo-ga sigoto-o yameta to] itta no?

why$_i$ everyone-Nom [t_i Taro-Nom job-Acc quit C] said Q

'Why did everyone say that Taro quit his job?'

e “almost” and universal quantifier

* Naze$_i$ hotondo daremo-ga [t_i Taroo-ga sigoto-o yameta to] itta no?

why$_i$ almost everyone-Nom [t_i Taro-Nom job-Acc quit C] said Q

‘Why did almost everyone say that Taro quit his job?’

The degree to which the movement in these examples is bad is similar to the examples in which an argument wh-phrase occurs under these QUIBs. Thus, for example, just as the long-distance *naze* extraction across the existential quantifier *dareka* 'someone' in (b) above is judged to be "??", the example of argument wh-phrase-in-situ underneath this same QUIB was judged to be mildly deviant. The example is repeated below.

?? Dare*ka*-ga nani-o katta no?

someone-Nom what-Acc bought Q

‘Someone bought what?’

This is an indication that the QUIB is behaving as expected if it is a weak island -- it blocks wh-operator movement (cf. Watanabe 1992), as exemplified in this example, and it blocks overt movement of adjunct wh-phrase *naze*. To complete the picture, we can see that, as expected, overt long-distance movement of an argument wh-phrase does not induce an intervention effect. I will give just one example involving the NPI *sika-nai* 'only'.

Nani-o$_i$ Hanako-sika [Taroo-ga t_i katta to] omottei-nai no?

what$_i$ Hanako-only [Taro-Nom t_i bought C] think-Neg-Past Q

'What does only Hanako think that Taro bought?’

Finally, there are expressions that appear to be quantificational, but nevertheless do not induce an intervention effect. *Minna* 'all' is such an expression. We predict that it does not block

wh-operator movement of wh-phrase, and it also should not block overt long-distance movement of *naze*. This is shown below.

minna 'all'

a. *Minna* -ga nani-o katta no? (cf. Hoji 1986)
   all-Nom what-Acc bought Q
   'What did all buy?'

b. ? Naze$_i$minna-ga [t_i Taroo-ga sigoto-o yameta to] omotteiru no?
   why$_i$ all-Nom [t_i Taro-Nomjob-Acc quit C] think Q
   'Why do all think that Taro quit his job?'

In the previous section, I identified the QUIBs in Japanese, which turn out to all be associated with either the morpheme *ka* or the morpheme *mo*. These QUIBs have precisely the properties we expect as weak islands, giving credence to the idea that weak islands are QUIBs. These properties are:

-- intervene in the wh-operator movement of wh-phrase

-- intervene in the overt long-distance movement of the adjunct wh-phrase *naze* 'why'

-- does not intervene in the movement of argument wh-phrases

We know why the argument wh-phrase may move across a QUIB. The overt movement moves the entire wh-phrase, including its restriction, above the QUIB. This leaves only the individual variable in the original position, allowing the chain to escape a QUIB violation. In the next section, we turn to the wh-phrase *why/naze*, in order to explain the reason for its susceptibility to intervention effect.

6. *Why/Naze*

Why is *why/naze* subject to intervention effect? The relevant examples from English and Japanese are repeated below (for wh-island, only English is given; I will discuss wh-islands in Japanese later).

a. Wh-island

E: *Why$_i$ do you wonder [whether to fix the car t_i]?

b. Negative/NPI island

E: *Why$_i$ do**n't** you think that John talked to Mary t_i?

J: *Naze$_i$ Hanako-sika [t_i Taroo-ga sigoto-o yameta to] omottei-nai no?

why$_i$ Hanako-only [t_i Taro-Nom job-Acc quit C] think-Neg-Past Q

'Why does only Hanako think that Taro quit his job?'

We are working under the assumption that these are QUIB effects, and the particular version of the QUIB effect I have adopted, which makes no overt/LF distinction in movement, is Pesetsky (2000), repeated below.

Intervention effect (universal characterization) (Pesetsky 2000, p. 67)

A semantic restriction on a quantifier (including *wh*) may not be separated from that quantifier by a scope-bearing element.

If QUIB effects occur when a quantifier and its restriction are separated by a QUIB, we make the prediction that *why/naze* has a much more complex structure than what is represented in overt form. Specifically, we predict that when *why/naze* moves overtly, its restriction is left behind. What moves, then, is only the quantificational part. The restriction that remains must be phonetically unrealized.

What I wish to propose for *why/naze* is that it is virtually a mirror image of what we have observed with an argument wh-phrase-in-situ. Following the work of Watanabe, I have argued

that when an argument wh-phrase stays in situ, its wh-operator, which is unpronounced, moves to C, leaving behind the semantic restriction. But for *why/naze*, I suggest exactly the opposite. *Why/naze* corresponds to the wh-operator portion, so moving it leaves behind the semantic restriction.

argument wh-phrase:	wh (unpronounced)	RESTRICTION (pronounced)
why/naze	wh (pronounced)	RESTRICTION (unpronounced)

To see how we do this for *why*, I turn to Beck (1996a), who argues that *why* is associated with a semantic structure containing two components: [what reason x], [because of x]. For the question, *why did John leave?,* she would associate the following structure.

what reason x, [John left [because of x]]

This captures the fact that *why* questions are answered with a *because* clause that functions as a sentential adverbial. The answer to the question above would be answered with something like *John left because he felt sick*, or some abbreviation of it. I will refer to this as the "two component analysis" of *why/naze*. This analysis of *why* also captures the intuition that *why* is a sentential adverb (Bromberger 1992, Rizzi 1990). To capture this intuition, Bromberger, Rizzi, and most recently Ko (2002), suggest that *why* is merged directly into the Spec of CP. However, on Beck's proposal, the adverbial nature of *why* is represented with its restriction occurring as a sentential adverbial to the proposition of the question. Beck does not give any empirical evidence for her proposal. If we can find such evidence, we have a way to explain why the adjunct wh-phrase *why/naze* is flagged by a QUIB under overt movement: the QUIB intervenes between the quantifier represented by *why/naze* (what reason x) and its restriction (because of x).

Before moving on, it is necessary to make a modification in Beck's proposal of *why*. Recall that I am assuming that for the argument wh-in-situ, an operator moves to C, and leaves behind the semantic restriction (Watanabe 1992, cf. also Hagstrom 1998).

what x.....[x a thing/person/etc.]

To bring the analysis of *why* into line with this analysis, I suggest that the following for *why*.

what x.....[because of [reason x]]

The *because* clause is the unpronounced clause, and it contains the semantic restriction [*reason* x]. Now, for the argument wh-phrases, I assume that the restriction can raise to the Spec of CP or it can remain in-situ. If it moves, the wh-phrase has a "presuppositional" interpretation, but if it does not, it has a non-presuppositional interpretation.[4] With *why*, however, the restriction never moves up, and this is the reason for the "non-referential" interpretation of *why*. Why doesn't the restriction ever move out? As a speculation, note that it is in a *because* clause, which is an adjunct clause. Huang (1982) proposed that an element cannot be extracted out of an adjunct environment.[5]

How are the two components of *why* -- the quantifier part represented by *why/naze* and the unpronounced *because* clause that contains the restriction -- inserted into the structure? Does it begin as one component, for example, [*because of what x, x a reason*], and *what x* (*why/naze*) is then extracted? This would be an adjunct island violation. Therefore, I will assume that *why/naze* is generated separate from the *because* clause; the *because* clause always merges at TP,

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[4] One way to think about this distinction is to refer to leftist dislocation in Romance, in which a phrase dislocated to a position high in the structure receives a definite/specific interpretation (Rizzi 1986).

[5] I thank Irene Heim for pointing out to me that there is this possibility.

thereby ensuring a sentential modifier meaning for *why*. The quantifier portion (*why/naze*) may be merged anywhere, but it must end up at CP for interpretation. The movement of *why/naze* to CP would not leave a trace, because it must bind the variable in the restriction contained in the *because* clause.

I now turn to the evidence for the two-component analysis of *why*. As I noted earlier (Miyagawa 1998), there is a fundamental difference between *naze* and other wh-phrases with regard to QUIBs. While other wh-phrases are blocked, as we have seen, *naze* is unique in being able to move across a QUIB without inducing an intervention effect. The following is a minimal pair; the first example is with an argument wh-phrase, and the second with *naze*.

a. * Hanako-sika dare-ni erab-are-nakat-ta no?
Hanako-onlywho-by choose-Pass-Neg-Past Q
'Who was chosen only by Hanako?'

b. Hanako-sika *naze* erab-are-nakat-ta no?
Hanako-onlywhy choose-Past-Neg-Past Q
'Why was only Hanako chosen?'

The same point has been observed in Korean (Cho 1998, Ko 2002).

Amuto way ku chayk-ul ilk-ci-an-ass-ni? (Ko 2002)
anyone why the book-acc read-CI-Neg-Past-Q
'Why did no one read the book?'

Let us look at the structure for the grammatical example in b above. In this example, the QUIB occurs in the subject position; it is the NPI *sika-nai*. *Naze* occur after this QUIB, yet the sentence is grammatical.

CP

5

what x_i 4
TP C
5
TP [because of [reason x]]
$
QUIB (original position of *naze*)

The quantifier, *what x*, is the *naze* portion. It is merged in TP, and moves up to CP, as indicated. This is some sort of a covert movement, which I assume is comparable to the wh-operator movement (Watanabe 1992). What is important is that what has moved across the QUIB is just the quantifier, and its restriction is above this QUIB, which avoids an intervention effect. This explains why intervention effects with *why* do not arise in local situations.

Why didn't you come?

In this example, *why* has moved from somewhere lower than the negation, but because the restriction is above the negation, the sentence is grammatical. This analysis also makes the correct prediction about long-distance extraction of *why/naze*. Unlike local extraction, long-distance extraction induces an intervention effect, as we have seen.

*Why$_i$ don't you think [Mary will come home t_i]?

The same is observed for Japanese (Miyagawa 1998) and Korean (Ko 2002)

(a) Japanese

* Hanako-sika [Taroo-ga naze kono-hon-o katta ka] sira-nai no?
Hanako-only [Taro-Nom why this-book-Acc bought Q] know-Neg Q
'Why does only Hanako know that Taro bought this book?'

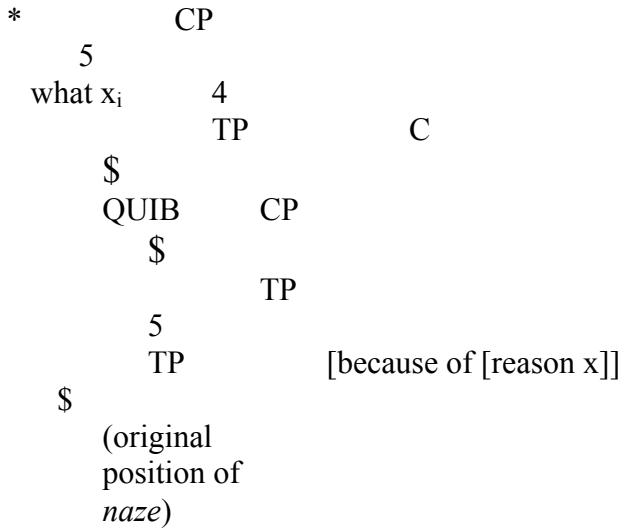
(b) Korean

* Amwuto [John-i way saimha-ass-ta-ko] malha-ci-an-ass-ni?

anyone [John-Nom why resign-Past-Dec-C] say-CI-Neg-Past-Q

'Why didn't anyone say that John resigned?'

The structure for the English, Japanese, and Korean sentences are given below. In English, the movement of *what x* to the matrix Spec of CP is by overt movement, while in Japanese and Korean, it is by some sort of phonetically-null operator/feature movement.



We can easily see that this structure would induce an intervention effect. The QUIB intervenes between the raised quantifier *what x* and its restriction, [*reason* x]. In sum, Beck's (1996b) proposal that *why* is composed of two components, the "quantifier" portion (*what reason x)* and the restriction (*because of x*) allows us to straightforwardly account for the QUIB effect with *why/naze* in QUIBs. In turn, we have strong evidence that weak islands are simply instances of the more general phenomenon of QUIBs. Below, I will give two additional arguments for the two-component analysis of *why/naze* questions.

6.1 Two additional arguments

Universal and Existential Paradigms

Japanese has morphological paradigms for universal and existential expressions. Both are created from indeterminate pronouns (cf. Kuroda 1965, Nishigauchi 1990, Kishimoto 2001) and the universal morpheme *-mo* or the existential morpheme *-ka*. As shown below, the universal paradigm has a gap for *naze*, while the existential paradigm does not.

Universal paradigm with -mo

wh/indeterminate expression *-mo* universal

dare 'who'	*dare-mo* 'everyone'
nani 'what'	*nani-mo* 'everything'
doko where'	*doko-mo* 'everywhere'
itu 'when'	*itu-mo* 'whenever'
naze 'why'	**naze-mo*

Existential paradigm with *-ka*

wh/indeterminate expression	*-ka* existential
dare 'who'	*dare-ka* 'someone'
nani 'what'	*nani-ka* 'something'
doko where'	*doko-la* 'somewhere'
itu 'when'	*itu-ka* 'sometime'
naze 'why'	*naze-ka* 'for some reason'

Let us suppose that in order to create a universal expression, *-mo* attaches to an indeterminate pronoun that functions as the semantic restriction of the universal quantifier.[6] For example, in the expression *dare-mo* 'everyone', *dare* is something like 'person x', and adding the universal morpheme *-mo* creates the expression, all x, x a person. This presupposes that the indeterminate pronoun (the wh-phrase) represents fully the relevant restriction. Under the approach I am assuming, this is true for all indeterminate expressions, except for *naze*. *Naze* does not have its restriction in its lexical composition proper. The restriction only arises when *naze* (and *why*) is inserted into the structure that contains the *because* clause. Why, then, is *naze* possible in the existential expression? There is one fundamental difference between the universal and the existential expressions. The existential expression can co-occur with a more articulated

[6] I thank Daiko Takahashi for suggesting this idea.

restriction, as if to suggest that the existential expression per se is, or need not be, associated with a fully articulated restriction on the indeterminate expression.

Gakusei-ga dareka kita.
student-Nom someone came
'Some student came.'

In the expression, *gakusei-ga dareka*, the semantic restriction is the NP, *gakusei* 'student', and the quantifier is the existential expression *dareka*, which occurs as a floated quantifier (this *dareka* does have some minimal restriction, viz., "a person"). This is not possible with a universal quantifier.[7]

*Gakusei-ga daremo kita.
student-Nom everyone came
'Every student came.'

Minimally, what we can say is that for the existential expression, the indeterminate pronoun need not represent the restriction. On this view, for *naze-ka* 'some reason', which is possible, it is

[7] There is a different expression that looks similar to this, but is acceptable. It is the NPI use of the universal expression.

(i) Gakusei-ga daremo ko-nakat-ta.
student-Nom no come-Neg-Past
'No student came.'

This NPI usage is different from the use of the universal expressions in non-NPI contexts.

plausible to say that the restriction is insdie the sentential adverbial *because* clause. Thus, the following existential expression in (a) would have the semantic representation in (b).

a. Taroo-ga naze-ka waratta.
   Taroo-Nom some.reason laughed

b. [Taro laughed [because of some x, [x a reason]]

Further evidence for this representation is that, unlike other existential expressions, which may be accompanied by an overt restriction, as in the case of "student" in , with *naze-ka*, no such overt restriction is allowed.

* Taroo-ga siranai-riyuu-de naze-ka waratta.
Taro-Nom unknown-reason-by some.reason laughed
'For some unknown reason, Taro laughed.'

The occurrence of *naze* in turn induces the occurrence of the *because* with the restriciton, and no other expression that stands for "reason" is tolerated.[8]

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[8] There is a similar "existential" paradigm in Georgian (I thank Alice Harris for pointing this out to me). One difference is that there are two existentials, indefinite and non-specific, and indefinite and specific. The following gives the entire paradigm (cf. Harris 1984).

(i) <u>indeterminate</u>	<u>indef. & non-spec</u>.	<u>indef. & spec.</u>
vin 'who'	vin-γac 'someone'	vin-me 'someone'
ra 'what'	ra-γac 'something'	ra-me 'something'
sad 'where'	sad-γac 'somewhere'	sad-me 'somewhere'
radis 'when'	radis-γac 'whenever'	radis-me 'whenever'
rat'om 'why'	rat'om-γac 'for some reason'	*rat'om-me

Anti-superiority

Saito (1982, 1985) discovered an odd distribution of *naze* relative to another wh-phrase. As shown below, when another wh-phrase occurs along with *naze*, *naze* must follow this other wh-phrase.

Saito (1982, 1985)

a. Taroo-wa nani-o naze katta no?
   Taro-Top what-Acc why bought Q
   'Why did Taro buy what?'

b. ??Taroo-wa naze nani-o katta no?
   Taro-Top why what-Acc bought Q

In Saito (1994), he argues that the adjunct wh-phrase adjoins to the argument wh-phrase, which makes absorption in the sense of Higginbotham and May (1981) possible, in turn allowing a pair-list interpretation. But for *naze* to adjoin to the other wh-phrase, *naze* must occur lower than the other wh-phrase. As predicted by this analysis, if there is an interpretation that is possible with (b), in which *naze* precedes *nani* 'what', it is the non-absorption, single-pair interpretation (as opposed to pair-list).

While Saito's analysis gets the right results, the mechanism of *naze* adjoining to another wh-phrase appears to be idiosyncratic and somewhat stipulative. Is there a way to derive these

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Note that there is a gap in the paradigm with the indefinite, specific counterpart of *why*. The non-specific counterpart does occur (*rat'om-γac*). This is expected under our analysis. The restriction of *why* occurs low in the structure, so that *why* can never be interpreted as specific/definite.

interesting facts from a more general set of assumptions? Remember that the issue at hand is that, when *naze* precedes another wh-phrase, pair-list interpretation is impossible. There is, in fact, a well-known phenomenon about pair-list interpretations, originally noticed by Bolinger (1978) that is relevant. In modern terms, the left-most wh-phrase must be D-linked, in the sense of Pesetsky (1987). The following is from Bolinger (1978).

a. It's nice to have all those times scheduled, but when are you doing what?
(#But what are you doing when?)

b. It's nice to have all those activities ahead of you, but what are you doing when?
(#But when are you doing what?)

In (a) the discourse establishes "all those times" as the topic, so that "when" can "link" to this discourse topic, thus be D-linked. "What" is understood as ranging over the possible "whens" that are known in the conversation. As indicated in the parentheses, reversing the order to "what...when" in this context is distinctly odd because "what" does not link to a discourse topic, hence it is not D-linked. This way of generating pair-lists in multiple wh-questions is generally accepted in semantics (Comorovski 1996, Hornstein 1994).

Returning to Japanese, in order for *naze* and *nani* 'what' in that order to be interpreted as a pair-list question, *naze* must be D-linked. However, as Rizzi noted, *why* is inherently non-presuppositional. As a result, it can never be D-linked, hence *naze* cannot be the "left" member of a wh-pair to give pair-list interpretation. There is, of course, no problem in *naze* being the "right-side" member, with the argument wh-phrase such as *nani* 'what' being the left-side member that is D-linked. S. Watanabe (1994), following Hornstein (1995), gives this analysis. On this account, what Saito discovered is the failure of *naze* to be D-linked, hence its inability to occur as the "anchoring" wh-phrase in a pair-list interpretation.

If anything like what I have said above is on the right track, we have a correlation between what can be D-linked and where the restriction is interpreted. If the restriction is interpreted high in the structure, in the Spec of CP, the wh-phrase may be D-linked, but if not, the wh-phrase is limited to the non-presuppositional interpretation.

Now, we might ask, what is the nature of this intrinsically non-presuppositional nature of *naze*? It is stipulated by both Rizzi and S. Watanabe. Remember that we have adopted Beck's (1996b) analysis of *why*, in which the restriction [reason x] always occurs inside the *because* sentential adverbial clause. This means that the restriction always occurs lower than the quantifier. As I mentioned earlier, the restriction cannot raise and join the quantifier possibly because the restriction, which occurs in the *because* clause, cannot move out of this adjunct clause. This recalls the analysis of *how many x*, which has the property that the semantic restriction may occur high or low in the structure; if it occurs high, the set that the restriction represents is presupposed, but if it occurs low, the set is non-presupposed. With *naze*, there is not the high/low option for the restriction, but it is always low, adjoined to the TP. We can thus surmise that *naze* is intrinsically non-presuppositional because its semantic representation always has the restriction low in the structure. This is consistent with what we have observed about weak islands, and it allows us to derive the non-presuppositional nature of *why/naze* without having to stipulate it.

Why/naze is non-presuppositional because its restriction is always interpreted low in the structure relative to the quantifier.

In English, this anti-superiority does not occur. The following is fine with *why* being the left wh-phrase.

Why did you buy what?

One possibility is to key in on the fact that in English, but not in Japanese, there is overt wh-movement. In , *why* has moved to the Spec of CP from some position to the right of *what*. Suppose that *why* can reconstruct to its original position. This would allow *what* to be the "anchor" wh-phrase in a pair-list interpretation. Indeed, the most natural interpretation for is that there is an understood set of things (*what*), and the speaker wants to know for each thing, why the addressee bought it.

Finally, there are Japanese speakers who do not perceive much deviation with the *naze-nani* order, the order that Saito identified as violating anti-superiority. One possible reason is that these speakers allow string vacuous scrambling of *naze* and *nani*, so that at surface form, the two wh-phrases are in a crossing chain formation.

... $naze_i$ ... $nani_j$ ... t_i ... t_j ...

Naze can reconstruct, allowing *nani* to be the anchoring wh-phrase in a manner similar to the English example.[9]

7. *How*

[9] Thanks to Masa Koizumi for suggesting this analysis for Japanese speakers who do not have the anti-superiority violation.

Up to now I have treated *why* without also addressing the other adjunct wh-phrase, *how*. It is well-known that *how* behaves similarly to *why* in being subject to weak islands, although the island effect with *how* is not always as robust as with *why*.

*How$_i$ do you wonder whether to fix the car t_i?

Without going into the details of the analysis, I will assume that *how* has a structure similar to *why*: its restriction is in a component that is separate from *how*. As a result, *how* always gets a non-presuppositional interpretation. Thus, it is subject to anti-superiority, as shown below.

a. Taroo-wa nani-o doo naositano?
   Taro-Top what-Acc how fixed
   'How did Taro fix what?'

b. *Taroo-wa doo nani-o naosita no?
   Taro-Top how what-Acc fixed Q

As we saw with *naze*, *doo* 'how' cannot be the first wh-phrase in a multiple wh question.

One difference between *doo* and *naze* is that unlike *naze*, *doo* is always flagged by a QUIB.

*Taroo-sikadoo kuruma-o naosa-nakat-ta no?
Taro-only how car-Acc fixed-Neg-Past Q
'How did only Taro fix the car?'

Apparently, this difference arises from the fact that *doo/how* is a VP modifier, not a TP modifier. As a result, the semantic restriction is in VP, not on TP as is the case with *naze/why*. Consequently, *doo/how* has a structure in which a QUIB in the subject position will intervene between the operator (*doo/how*) and its semantic restriction in VP.

8. Wh-island in Japanese

The wh-island in Japanese appears simply to be an instance of a QUIB. Thus, it blocks wh-in-situ (cf. Nishigauchi 1986, Watanabe 1992).

??Taroo-ga [$_{CP}$ Hanako-ga nani-o katta ka] sitte-iru no?

Taro-Nom [$_{CP}$ Hanako-Nom what-Accbought Q know Q

'What does Taro know Hanako bought?'

This sentence becomes fine if the wh-phrase is scrambled to the matrix clause, where it can readily take matrix scope (cf. Takahashi 1993).

Nani-o$_i$ Taroo-ga [$_{CP}$ Hanako-ga t_i katta ka] sitte-iru no?

what-Acc$_i$ Taro-Nom[$_{CP}$ Hanako-Nom t_i bought Q know Q

'What does Taro know Hanako bought?'

The grammaticality of this example suggests that the ungrammaticality of the "wh-in-situ" example in is due to a QUIB effect. It cannot, for example, be subjacency, as proposed by Watanabe (1992). If it is subjacency, we would expect to be equally deviant, which it is not. The contrast we see here is precisely the contrast we found with argument wh-phrases and QUIBs: an argument wh-phrase-in-situ is ungrammatical if it is dominated by a QUIB, but it is fine if it is scrambled to a position that is structurally higher than the QUIB. The familiar pair is repeated below.

a. * Hanako-sika nani-o kawa-nakat-ta no?

Hanako-onlywhat-Acc buy-Neg-Past Q

'What did only Hanako buy?'

b. Nani-o_i Hanako-sika t_i kawa-nakat-ta no?

what-Acc_i Hanako-only t_i buy-Neg-Past Q

However, there is one surprising point having to do with the adjunct wh-phrase *naze*. As expected, *naze* in a wh-island cannot be extracted outside of the island.

* Mary-ga [$_{CP}$ naze John-ga sono setu-o sinziteiru ka] sitteiru no?

Mary-Nom [$_{CP}$ why John-Nom that theory-Acc believe Q] know Q

'Why does Mary know John believes in that theory?'

Now, if a wh-island behaves like other QUIBs, we would expect that it would block extraction of *naze* even under overt movement. As noted by Boskoviç and Takahashi (1998), this is not the case (they acknowledge Mamoru Saito for suggesting the example; I have changed the example to a direct question).

? $Naze_i$ Mary-ga [$_{CP}$ t_i John-ga sono setu-o sinziteiru ka] sitteiru no?

why_i Mary-Nom [$_{CP}$ t_i John-Nomthat theory-Acc believe Q] know Q

(i) 'Do you know if Mary knows why John believes in that theory?'

(ii) *'Why does Mary know John believes in that theory t_i?'

We see that the interpretation that is acceptable is a matrix yes/no question with *naze* being construed as part of the indirect question, "why John believes in that theory." As the ungrammaticality of (ii) indicates, it is not possible to interpret *naze* as a matrix direct question if it originates in the wh-island. This means that *naze* must reconstruct to some position inside the subordinate CP. Given what we have observed up to this point, even the yes/no interpretation in

(i) ought to be ungrammatical, since, on the surface, the "quantifier" *naze* has been extracted out of the wh-island, whose CP is a QUIB, leaving its restriction below the QUIB. This is a quintessential context for a QUIB violation.

Let us suppose that in Japanese, but not in English, the Spec of CP in wh-island is available as an escape hatch for overt movement (we will return to why it isn't available for covert movement below). This seems plausible if we compare the form of the wh-island in these two languages. In English, if one extracts a wh-phrase from a wh-island, the Spec of CP in the island must be occupied by some wh element, either another wh-phrase that is raised there or *whether*.

What$_i$ do you wonder *(whether) to fix t_i?

So, in English, no matter what, the Spec of CP within the wh-island is filled. On the other hand, in Japanese, because there is no overt wh-movement, there is no reason to believe that the Spec of CP in the island is occupied. The question particle *ka* is the head of the CP, and, if we follow Hagstrom (1998), this *ka* has undergone movement to the head of CP and has checked off the wh-feature. This *ka* is a head, and, presumably, it is at C. The Spec of CP is, thus, unoccupied. On this assumption, the analysis of the grammatical Boskoviç and Takahashi example is as follows, with *ka* meeting the wh criterion of the indirect question.

? Naze$_i$ Mary-ga [$_{CP}$ t_1 [$_{TP}$ __ John-ga sono setu-o sinziteiru] ka]

why$_i$ Mary-Nom [$_{CP}$ t_1 [$_{TP}$ __ John-Nom thattheory-Acc believe] Q]

sitteiru no?

know Q

'Why, Mary knows John believes in that theory?'

The underline indicates the original position of *naze*, and t_1 is the copy of the wh-phrase in the escape hatch -- Spec of CP in the wh-island. Let us look at each step of the derivation. First, *naze* moves from inside the embedded TP to the lower Spec of CP. This does not violate the QUIB induced by Q, because the QUIB is the CP that dominates the Q, and *naze* is in the Spec of this CP. *Naze* then moves to the matrix Spec of CP by long-distance scrambling. What is important to note is that the copy of *naze* in the Spec of the lower CP satisfies the Wh Criterion of the indirect question, and this copy does not violate the QUIB induced by Q of the wh-island because it is in the Spec of this Q. I therefore assume that it is this copy in the escape hatch that makes the interpretation of possible. If, instead of the matrix yes/no question (the (i) interpretation for , which is grammatical), we impose a matrix wh-question interpretation, we correctly predict that it would be ungrammatical because *naze* would have to be interpreted at the matrix C, not at the "escape hatch," hence it would be in violation of the QUIB. This is because its restriction is on the lower TP inside the island.

Why does covert movement out of the wh-island get flagged by the QUIB unlike overt movement (cf.)? This is true for both argument wh-phrase and *naze*. The answer must be because the covert movement is some sort of “feature” movement (or *ka* movement). As such it does not go through the Spec, but rather, it would go directly to the matrix C. Therefore, the escape hatch of the lower Spec of CP is unavailable to covert movement. But I have argued that

why/naze phonetically represents the wh-operator portion. This is the wh-operator that moves covertly. What, then, is the difference between the overt wh-operator movement and covert wh-operator movement? Both should involve *why/naze*. Let us suppose that overt movement must involve a phrasal category, regardless of whether what is involved is simply a wh-operator. The phrase *why/naze* gives the wh-operator a "container" to function as a phrase. When the entire phrase moves up, then, it is able to move first to the lower Spec of CP, an escape hatch. Thus overt movement of *naze* does not get flagged by a QUIB. But in covert movement, the wh-operator of *why/naze* is able to leave behind its phrasal "container," thus moving as a feature. As a feature it does not go to Spec of CP, but rather, directly to the target C. If it moves to the matrix C across the wh-island, it would get flagged by the QUIB -- CP projected from the embedded C.

As the final point, what we have seen can give an account of a well-known phenomenon discovered by Saito (1989). He notes that a wh-phrase may scramble out of a wh-island, then "radically reconstruct" at LF to meet the Wh Criterion. The following is from his article.

? Dono-hon-o_i Mary-ga [$_{CP}$ John-ga t_i tosyokan-kara karidasita ka] .
which-book-Acc$_i$ Mary-Nom [$_{CP}$ John-Nom t_i library-from borrowed Q]
siritagatteiru koto
want.to.know fact
'The fact that Mary wants to know which book John borrowed from the library.'

Note that the wh-phrase *dono hon* 'which book' has been extracted from the wh-island, yet the sentence is perfectly grammatical. The question here is, how is the Wh Criterion of the indirect question being met? According to Saito, this example is evidence that the movement that is responsible for *dono hon* to have reached the matrix clause is "completely undone" at LF and

dono hon is placed back in its original position. This argument has been widely accepted as evidence that scrambling may be completely semantically vacuous. In turn, it is the genesis of the trend, now with wide currency in the field, to believe that scrambling is semantically vacuous and completely optional (e.g., Fukui 1993, Saito and Fukui 1998, Takano 1998). But given what we have seen above, there is a very different way to view this fact. The wh-phrase *dono hon* 'which book' first moves into the Spec of the lower CP in order to meet the Wh Criterion. This is equivalent to overt wh-movement (cf. Takahashi 1993), although Japanese is said to lack such a movement. It is, in fact, possible that a *wh* feature moves independent of the wh-phrase. Either way, the Wh Criterion is met at the lower CP. The wh-phrase then undergoes long-distance scrambling. But its copy is in the escape hatch, and so long as this copy is interpreted in that position, there is no problem whatsoever. On this account there is no reason to assume anything like radical reconstruction. It is the familiar reconstruction associated with wh-movement in languages such as English (cf. Fox 2000, Lebeaux 1988). In fact we can give a Condition C argument to show that this scrambled wh-phrase need not "radically" reconstruct to the original position.

a. ?* Dono-Taroo$_j$-no-hon-o$_i$ kare$_j$-ga [$_{CP}$ Hanako-ga t_i yonda ka] sitteiru.

which-Taro$_j$-Gen-book-Acc$_i$ he$_j$-Nom [$_{CP}$ Hanako-Nom t_i read Q] know

'Which of Taro's books, he knows Hanako read ___.'

b. Dono-Taroo$_j$-no-hon-o$_i$ Hanako-ga [$_{CP}$ kare$_j$-ga t_i yonda ka] sitteiru.

which-Taro$_j$-Gen-book-Acc$_i$ Hanako-Nom [$_{CP}$ he$_j$-Nom t_i read Q] know

'Which of Taro's books, Hanako knows he read ___.'

The (a) sentence shows that *dono Taro-no hon* 'which book of Taro's' must reconstruct to a position lower than the matrix subject, which, in this example, leads to a Condition C violation. The example in (b) indicates that this reconstruction need not to be to the original position of the wh-phrase, suggesting that the wh-phrase is interpreted in the escape hatch. This, then, is evidence that the wh-phrase only reconstructs to the escape hatch -- Spec of CP.

Additionally, we can show that this reconstruction has precisely the property originally noted by Lebeaux (1988) for wh-movement in English. Note that the following is grammatical.

Dono Taroo-ga$_j$ katta hon-o$_i$ kare$_j$-ga [$_{CP}$ Hanako-ga t_i yonda ka] sitteiru.

which Taro$_j$-Nom book-Acc$_i$ he$_j$-Nom [$_{CP}$ Hanako-Nom t_i read Q] know

'Which book that Taro bought, he knows Hanako read ___.'

This example contrasts with a, which is ungrammatical. The difference is that while the antecedent *Taro* in a is an argument of the nominal head, it occurs in a relative clause in , which is an adjunct. As Lebeaux (1988) has pointed out, this argument/adjunct distinction plays a crucial role in Condition C.

a. ?? [Which report that John was a sleep] did he believe?

b. [Which report that John heard] did he believe?

In (a) the lower CP is the argument of *report*, while in (b) it is not. Lebeaux uses this distinction to argue that lexical insertion may take place at various cycles, so long as it is an adjunct. Thus, in (b), *that John heard* is inserted after the wh-phrase is raised to the matrix CP, thereby escaping the effect of Condition C. In (a), where the CP is an argument, the CP must be merged to begin with, thus the wh-phrase cannot escape Condition C. Lebeaux assumes that Condition C applies at all levels, including D-structure; the example in (a) violated Condition C at D-structure prior to the movement of the wh-phrase. See Chomky (1995) and Fox (2000) for a reconstruction analysis of this phenomenon.

Returning to Japanese, what is clear is that we cannot assume radical reconstruction for the Saito-type examples. If it were to apply, it would incorrectly predict that sentences such as would be ungrammatical, since the entire wh-phrase, with the relative clause containing *Taro*, would radically reconstruct and be flagged by Condition C. Clearly this is not the case.

Finally, we don't see anything like this in English, as Saito (1989) correctly notes. His explanation is that there is no radical reconstruction in English. Ours is that the Spec of CP in the indirect question in English cannot function as an escape hatch, an explanation that we have seen can account for other facts a along with this fact noted by Saito.

9. Pair-list interpretation

As the final point in this article, I will take up the issue of pair-list interpretation, as a way of giving further evidence for the type of analysis I have presented. May (1985) noted the minimal pair below.

a. Who bought everything? *PL

b. What did everyone buy t? PL

The Japanese counterpart may be in two forms, given below.

a. ?* Daremo-ga nani-o katta no?
everyone-Nom what-Acc bought Q
' What did everyone buy?'

b. Nani-o_i daremo-ga t_i katta no?
what-Acc_i everyone-Nom t_i bought Q
'What did everyone buy?'
*PL (Hoji 1986)

In (a), the object wh-phrase *nani* is in situ, and as we have already seen with this type of example, it is ungrammatical because the universal quantifier is a QUIB. In (b), the object wh-phrase has been scrambled to the left of the subject universal quantifier. The example is grammatical. However, as noted by Hoji (1986) this example lacks a pair-list interpretation. To see why this is the case, let us go back to the ungrammatical example in (a). If we insert the word *sorezore* 'each' by the universal quantifier, two things happen.

Daremo-ga *sorezore* nani-o katta no?
everyone-Nomeach what-Acc bought Q
'What did everyone each buy?' (Pair-list possible)

First, the sentence becomes grammatical, unlike the (a) example above. Second, it is possible with *sorezore* to get a pair-list interpretation. Why should the addition of *sorezore* 'each' have these effects? In English, *each* is said to be inherently focused (Culicover and Rochemont

1993). May (1985, 1988) argues that this inherent focus property causes an *each* phrase to move high in the structure, adjoining to CP. This is the reason why we get the minimal pair below.

a. Who loves every girl? (no pair-list)

b. Who loves each girl? (pair-list)

Each girl, by virtue of its focus, raises above the wh-phrase, making it possible to take scope over the wh-phrase, in turn, making the pair-list interpretation available. The same account can apply to the Japanese example in , in which the addition of *sorezore* 'each' makes it possible to somehow overcome the QUIB violation. The structure is given below.

$[_{CP}$ [daremo-ga sorezore]$_i$ $[_{CP}$ C-*wh*$_i$ $[_{IP}$ .... t_i RESTRICTION...]]]

$[_{CP}$ [everyone-Nom each]$_i$ $[_{CP}$ C-*wh*$_i$ $[_{IP}$ .... t_i RESTRICTION...]]]

Sorezore, by virtue of its focus feature, takes with it the universal quantifier to adjoin to CP. By so doing, it takes the QUIB, *daremo* 'everyone', outside the wh-chain, preventing the QUIB from intervening in the formation of the wh-chain. Thus the sentence is grammatical. At the same time, the fact that the universal quantifier scopes over the wh-chain makes it possible to obtain the pair-list interpretation. Given that in Japanese, the universal quantifier *daremo* does not allow pair-list interpretation (cf. b), but in English, we do get pair-list for the comparable example (*What did everyone buy?*), it appears that the difference is that the Japanese universal quantifier *daremo* cannot scope above the CP, while the universal *every* in English can.[10]

Finally, I give evidence that when *sorezore* is involved, movement occurs that otherwise would not. As is well-known, Japanese is a scopally rigid language.

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[10] What we have observed about Japanese suggests that the so-called "quantifying in" analysis of pair-list is the right approach. As suggested by Groenendijk and Stokhof (1984), May (1985, 1988), Higginbotham (1991, 1993, 1996), and Beck (1996a), pair list is made possible by the universal quantifier taking scope over the wh-chain, by raising to CP. This is what we observed with Japanese. We can tell that the universal quantifiier plus *sorezore* 'each' is moving above the wh-chain because there is not QUIB effect.

Dareka-ga daremo-o syootaisita.

someone-Nom everyone-Acc invited

'Someone invited everyone.'

some > every, *every >some

However, as was noted by Hoji (1985), when we put *sorezore* on the object quantifier, inverse scope becomes possible.

Dareka-ga daremo-o *sorezore* syootaisita. (cf. Hoji 1985)

someone-Nom everyone-Acc each invited

'Someone invited everyone each.'

some > every, everyone each >some

On the standard analysis that inverse scope is made possible by the lower quantifier raising above the higher quantifier (cf. May 1977), we see that *sorezore* makes this movement possible.

10. Conclusion

In this article I gave arguments to show that the phenomenon of weak islands across languages derives from one condition: Quantifier-Induced Barriers. A quantifier separated from its restriction by a QUIB is ungrammatical. All instances of weak island are precisely of this nature. I spent some time on *why* and the Japanese counterpart *naze*. I argued, following Beck, that *why/naze* has a semantic structure in which the restriction is placed lower in the structure then where *why/naze* occurs. As a result, when *why/naze* moves, only the quantifier moves, so that if this wh-phrase crosses a QUIB, it automatically induces a weak island effect because the restriction is left behind.

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