Wh-Island Effects in Japanese and English*

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1. Introduction

Since Watanabe (1992a, b), the view is dominant that *wh*-questions in Japanese undergo null operator movement to Spec-C; this movement, though invisible, is parallel to *wh*-movement in English in the sense that its application is made in overt syntax (i.e., narrow syntax). This view is itself theoretically favorable because it is compatible with the Minimalist Program, which reduces every movement operation to Merge, a fundamental narrow-syntactic operation necessary for assembling abstract structures. Meanwhile, Watanabe (2006) concludes, in comparing Old and Modern Japanese *wh*-questions, that Modern Japanese involves no movement operation in their derivations; rather, it establishes *wh*-questions based on Agree (but not binding), which, too, is consistent with minimalist tenets.

In this article, we will maintain that Japanese appeals to Agree in forming *wh*-questions, consistent with Watanabe's (2006) conclusion. To put it another way, Japanese licenses *wh*-phrases in situ on the basis of the agreement relation between Q and WH, a syntactic system distinct from English. This conclusion will be obtained by reconsidering the following paradigm on *wh*-island phenomena exemplified by Watanabe (1992a:263):[1]

(1) ?? John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
siritagatte iru no?
know-want Nominal
'What does John want to know whether Mary bought?'

(2) a. John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
dare-ni tazuneta no?
who-Dat asked Nominal
'Who did John ask *t* whether Mary bought what?'

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[1] The following abbreviations are used in the glosses of examples in this article: Acc = accusative, Dat = dative, Nom = nominative, Nominal = nominalizer, SFP = sentence-final (clause-final) particle, Top = topic.

b. ??John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
'What did John ask Tom whether Mary bought *t*?'

From the careful observation of the paradigm, *wh*-island phenomena can be best explained through a non-movement analysis of *wh*-questions in Japanese under the common but significant premise that linguistic phenomena usually surface as the result of interactions among various linguistic factors. More specifically, we will reveal in this article that (i) the phenomena Watanabe's (1992a) paradigm displays and (ii) its related phenomena in Japanese and English emerge from the interaction between syntactic and semantico-pragmatic factors.[2] (i) originally leads Watanabe (1992a) to a movement analysis of *wh*-questions in Japanese (see section 2.1); later, Watanabe (2006) confirms the plausibility of a non-movement analysis of them using broader perspectives. In this sense, the analysis developed in this article, which recaptures (i) and newly explains (ii) from the non-movement approach to Japanese *wh*-questions in tandem with semantico-pragmatics, takes on a major significance.

This article is organized as follows. Section 2 examines Watanabe's (1992a) paradigm and points out some problematic aspects with his original observation. Section 3 introduces a syntactic model for explanation, based on Watanabe (2006) and Sakamoto and Ikarashi (2014, 2015), which enables us to thoroughly examine the paradigm in question in section 4, giving additional supporting evidence. Section 5 explores consequences of the proposed analysis by surveying the English counterparts of, and data related to, the paradigm. Section 6 concludes this article.

2. Watanabe's (1992a) Paradigm

2.1. Original Observation

Let us begin with the paradigm mentioned in section 1:

(1) ??John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether

[2] The target of discussion in this article is limited to *wh*-island cases (mainly, *whether*-island cases) with argument *wh*-phrases. Also, the direction of the analysis proposed here is similar to that of Abrusán (2014) and related works cited there in the sense that it assumes weak island cases to be derived not only from syntactic factors but also from semantico-pragmatic factors (see Boeckx (2012) for detailed discussion on the nature of islands).

siritagatte iru no?
know-want Nominal
'What does John want to know whether Mary bought?'

(2) a. John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
dare-ni tazuneta no?
who-Dat asked Nominal
'Who did John ask *t* whether Mary bought what?'

b. ?? John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
'What did John ask Tom whether Mary bought *t*?'

In (1), the *wh*-phrase is placed inside the embedded clause headed by *ka dooka*. This placement exhibits a *wh*-island effect; that is, the *wh*-phrase *nani* cannot take scope over the matrix clause. The contrast between (2a) and (2b) shows that an additional *wh*-phrase, but not an additional non-*wh* element, in the matrix clause obviates a *wh*-island violation.

According to Watanabe (1992a), the structure of a Japanese *wh*-question is schematized as follows:

(3) $[_{CP}\ Op_i\ [_{TP}\ \ldots wh\text{-phrase}_i \ldots]\ ka]$

Under his analysis, a *wh*-phrase is divided into a visible and an invisible part. The former, called an indeterminate pronoun (see Kuroda (1965), Nishigauchi (1990), Watanabe (1992b), Tsai (1994)), remains in situ after the latter, called a null operator, undergoes movement to Spec-C, an invisible counterpart of *wh*-movement in English. Watanabe (1992a:264) assumes that [+WH] C requires one and only one *Op* to occupy Spec-C at narrow syntax. For (1) to be interpreted as a *wh*-question, the invisible part of *nani* is required to move to Spec-C in the matrix clause. This movement which crosses the embedded clause headed by *ka dooka* produces a *wh*-island effect. Example (2a), where there is an additional *wh*-phrase in the matrix clause, can be interpreted as a *wh*-question requiring the value of that *wh*-phrase. Under this interpretation, it is only the invisible part of *dare* that undergoes movement to Spec-C in the matrix clause; the *wh*-phrase in the embedded clause remains in situ. Thus, the occurrence of the additional *wh*-phrase in (2a) renders a *wh*-island violation null. Example (2b) has an additional non-*wh* element

in the matrix clause. In this case, the sentence induces a *wh*-island effect without improvement, which comes from the fact that the invisible part of *nani* in the embedded clause, the only moving candidate for *wh*-question formation, is forced to move to Spec-C in the matrix clause.

In this way, Watanabe (1992a) gives a principled account of the paradigm, maintaining that Japanese involves an invisible version of the narrow-syntactic *wh*-question formation in English.

2.2. Further Observation

Although Watanabe's (1992a) attempt to reduce alleged LF movement to narrow-syntactic movement is itself quite attractive, he does not commit himself to important grammatical aspects that should be handled in his observation:

(4) ?? John-wa [Mary-ga nani-o katta ka dooka] siranai.
John-Top Mary-Nom what-Acc bought whether know-not
'John doesn't know whether Mary bought what.'

Example (4) is a declarative counterpart of (1). Since the matrix CP is of [–WH], *nani* is not required to move to its specifier position; nonetheless, the sentence is awkward. Crucially, the less acceptable status of (4) is irrelevant to the *wh*-island effect, at least in the sense of Watanabe (1992a). Considering this fact, observe the sentence in (2b), which is repeated here as (5), with a potential interpretation added as (5ii).

(5) John-wa [Mary-ga nani-o katta ka dooka] (= (2b))
John-Top Mary-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
i. ?? 'What did John ask Tom whether Mary bought *t*?' [*wh*-question]
ii. ?? 'Did John ask Tom whether Mary bought what?' [yes/no-question]

Watanabe's judgment is concerned only with interpretation (5i). It is important to note that (5) is difficult to be interpreted as a yes/no-question as well, as shown in interpretation (5ii).

Further, let us observe the sentences below:

(6) a. John-wa [Mary-ga nani-o katta ka] siranai.
John-Top Mary-Nom what-Acc bought SFP know-not
'John doesn't know what Mary bought.'

b. John-wa [Mary-ga ano hon-o katta ka dooka] siranai.
John-Top Mary-Nom that book-Acc bought whether know-not
'John doesn't know whether Mary bought that book.'

These sentences both constitute minimal pairs of (4). (6a) is different from (4) in that *ka*, a distinct sentence-final particle, is used instead of *ka dooka* and (6b) from (4) in that *ano hon*, a non-*wh* lexical item, is used instead of *nani*. The replacement makes both sentences perfectly acceptable, which clearly shows that the combination of *nani* and *ka dooka* causes the less acceptable status of (4). Similarly, (5) contains a combination of *nani* and *ka dooka*, so it is natural that this is responsible for the less acceptable status of (5).

In addition, (5) should be compared with (7), where *ka dooka* is replaced with *ka*.

(7) John-wa [Mary-ga nani-o katta ka]
John-Top Mary-Nom what-Acc bought SFP
Tom-ni tazuneta no?
Tom-Dat asked Nominal
'Did John ask Tom what Mary bought?'

This sentence, unlike (5), can be interpreted as a yes/no-question without any difficulty. There is no combination between *nani* and *ka dooka* in (7). This fact shows that the unavailability of a *wh*-question interpretation should be ascribed to a different factor from the combination in question.

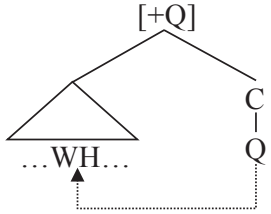
In this section, we have considered what factor(s) Watanabe's (1992a) paradigm should be attributed to. In section 3, we will introduce an explanatory system to handle the syntax of questions in English as well as in Japanese, based on which in section 4 we will explain the data observed above.

3. The Syntax of Questions

3.1. Clausal Typing and Scope Determination

Watanabe (2006) demonstrates, from both diachronic and synchronic viewpoints, that (Modern) Japanese employs Agree in forming *wh*-questions. Independent of his demonstration, Sakamoto and Ikarashi (S&I) (2014, 2015, 2016a) propose, in the process of exploring the derivations of certain rhetorical questions, that (normal) questions are formed through WH-Q binding in the sense of Harada (1972), which we refer to as WH-Q Agree because it is identifiable with what Watanabe calls Agree in the context of minimalism:

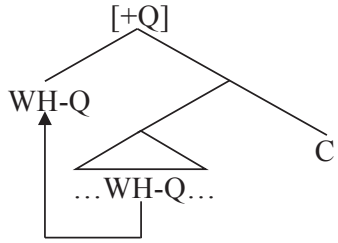
(8) Japanese question formation (WH-Q Agree):



Based on Cheng (1997), S&I argue that question formation, whether in Japanese or in English, is decomposed into two parts: clausal typing and scope determination. In (8), which corresponds to the structure of a Japanese question, the appearance of Q in the domain of C fixes the clause type as [+Q]; meanwhile, Q establishes an agreement relation with the *wh*-phrase under minimal search and identifies its scope-taking position (i.e., the clausal domain over which the *wh*-phrase has an effect).

In contrast to Japanese question formation, English exploits *wh*-movement in satisfying the requirements of clausal typing and scope determination:

(9) English question formation (internal Merge without WH-Q Agree):



As depicted in (9), English introduces a WH-Q complex into derivation without separation between WH and Q (cf. Cable (2010)). The WH-Q complex moves from its base position to Spec-C, thereby satisfying the requirements simultaneously. Although the two languages differ regarding whether the WH-Q complex is formed, they share the same mechanism in that question formation falls under clausal typing and scope determination, which are assumed to be ultimately universal.

3.2. Yes/No-Questions

Just as English bears a special form for indirect yes/no-questions (i.e., *whether*), Japanese has a counterpart of the item in its indirect yes/no-questions; the special form *ka dooka* appears in the clause-final position:[3]

[3] In (10a), I have purposely chosen a predicate without a postverbal polite form, to which *ka* is directly attached, whereby I advise the reader to concentrate on how matrix and embedded environments differ with respect to the occurrence of sentence-final particles. See Ikarashi (2014)

(10) a. Ano hon yonda ka (*dooka)?
that book read SFP
'Did you read that book?'

b. John-wa [Mary-ga ano hon-o yonda ka (dooka)] siranai.
John-Top Mary-Nom that book-Acc read whether know-not
'John doesn't know whether Mary read that book.'

Dooka in *ka dooka* can be omitted (*ka* can possibly be interpreted as *ka dooka*), as in (10b) (cf. Makino and Tsutsui (1986)), but importantly, it is unavailable in direct yes/no-questions, as in (10a).

It is often assumed (e.g., Larson (1985)) that in English, there is an invisible operator in a direct yes/no-question and a visible operator in an indirect yes/no-question; both operators are raised to Spec-C. It seems possible to assume that there exists an invisible operator also in a Japanese direct yes/no-question; WH-Q Agree holds between Q and the yes/no-operator, with the latter occupying a TP-adjoined position (see S&I (2015) for further details). Rather, the indirect yes/no-question requires further discussion.

As mentioned above, Japanese has *ka dooka* as a counterpart of *whether* in English. Although this item is seemingly a fixed expression, it is reasonable to consider that it is a separable one for the reason stated below. The item *ka* is used as a disjunctive marker, presumably as a basic usage; in this usage, it creates a disjunctive phrase together with two XPs:

(11) otoko ka onna (ka)
man or woman or
'(either) man or woman'

According to Teramura (1991), the use of *ka* in (11) is connected in meaning with the use of *ka* in the sentence-final position or in the clause-final position, which leads us to the hypothesis that *ka dooka* is a proposition-level disjunctive phrase:

(12) $[_{CP} \ldots [_{CP}$ TP *ka* TP *(*ka*)] …]

As shown in (12), the two TPs are disjunctively connected in the proposition-level disjunctive phrase; the second TP is occupied by the *wh*-word *doo* (cf. Nishigauchi and Ishii (2003:171)), which corresponds in meaning to the negation of the first TP. Interestingly, the occurrence of the second *ka* is obligatory unlike (11) (see footnote 6).

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for an intriguing account of the distribution of *ka*.

Martin (1988:925) points out that *doo* can behave as a "minimal alternative pro-sentence." Based on this observation, we would like to postulate without further justification that *doo* in *ka dooka* is a *wh* version of the non-*wh* proform *soo* 'so' (e.g., *soo omou* 'I think so') and is substituted for the first TP. Through the substitution, the first TP is connected disjunctively with the second TP (i.e., a *wh*-proform). Two items in disjunction cannot be the same syntactically and semantically. According to Swan (2016:226), the disjunctive marker *or* "joins grammatically similar expressions." Naturally, such expressions can be opposite lexically, as in (11). When two propositions are disjunctively connected in the case of *ka dooka*, the second TP substituted is forced to be opposite to the first TP. This opposition is not lexical but functional in the sense that the second TP is the propositional negation of the first TP. Substitution essentially creates two identical items. The same items cannot be connected disjunctively because disjunction requires similarity rather than sameness. Negation is a way of guaranteeing the similarity in the disjunction involving TP-substitution. In other words, the negation of the second TP substituted turns the formal relation between the two propositions from sameness into similarity. Consequently, the propositions in the *ka dooka* clause become opposite in meaning through a set of processes of TP-substitution, disjunction, and negation.[4]

The reason the form *doo*, but not *soo*, is utilized for the substitution stems from the existence of Q, which carries out scope determination based on WH-Q Agree. To put it simply, our proposal is that *doo* in *ka dooka* is a yes/no-operator whose scope-taking position is fixed by Q. The mandatory occurrence of the second *ka* serves as an indication of Q, which is an abstract entity at the level of syntax.[5] To put it differently, the second *ka* in (12) may not be omitted because it is a marker of clausal typing by Q at the syntactic level; in (11), the second *ka* is optional because it is irrelevant to clausal typing. The optionality of *ka* is also observed in the main clause, which has another means (i.e., a rising intonation) of indicating clausal typing by Q; in the written register, which cannot exploit a phonological indication, the use of *ka* and/or the question mark is obligatory (see also S&I (2015)).[6]

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[4] In the written register, the form *ka inaka*, where *ina* means *not*, can be used in place of *ka dooka* (cf. Makino and Tsutsui (2008)). This form might correspond to the sequence *whether…or not*.

[5] For the discussion on the relationship between Q and *ka*, see S&I (2014, 2015) and Ikarashi (2014).

[6] Precisely, the disjunctive phrase in (11) can be either nominal or propositional depending on the context:

(i) a. John-wa kinoo otoko ka onna (ka) ni atta.
John-Top yesterday man or woman or Dat met
'John met (either) a man or a woman yesterday.'

In sum, in (12), Q implements clausal typing and scope determination at the level of syntax, and the existence of Q at this abstract level is indicated lexically by the occurrence of *ka*; since (12) is an embedded environment, only lexical indication is available (phonological indication is unavailable). The result of the discussion here is schematized in (13).

(13) a. The structure of direct yes/no-questions in Japanese:
$[_{CP}\ [_{TP}\ Op_{y/n}\ \ldots]\ Q]$

b. The structure of indirect yes/no-questions in Japanese:
$[_{CP}\ \ldots\ [_{CP}\ [TP]\ \vee\ [wh\text{-pro}]\ Q]\ \ldots]$

The occurrence of Q in the domain of C types the relevant clause as [+Q] (i.e., clausal typing). From the domain of C, Q agrees with the invisible operator $Op_{y/n}$ in a direct yes/no-question; it agrees with the visible *wh*-proform *doo* in an indirect yes/no-question. Because of WH-Q Agree, the clausal domain over which the yes/no-operator has an effect is determined (i.e., scope determination).

In section 4, based on the analysis developed here, we will explain the data observed in section 2.

4. Explanation: Dissolving *Wh*-Island Effects

4.1. A Syntactic Factor: WH-Q Agree

We are now in a position to capture *wh*-island effects in a principled manner. Let us begin by discussing (7), in which *ka dooka* in (5) is replaced with *ka*: the sentence lacks a combination of *nani* and *ka dooka*; it is interpreted only as a yes/no-question.

(7) John-wa [Mary-ga nani-o katta ka]
John-Top Mary-Nom what-Acc bought SFP
Tom-ni tazuneta no?
Tom-Dat asked Nominal
'Did John ask Tom what Mary bought?'

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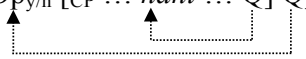
b. John-wa otoko ka onna *(ka) wakaranai.
John-Top man or woman or know-not
'I don't know whether John is male or female.'

(ia) contains the disjunction of two nominals and (ib) that of two propositions. The second *ka* can be omitted from (ia) but not from (ib). This fact is compatible with the considerations here.

(14) a. Yes/no-question interpretation:



b. *Wh*-question interpretation:

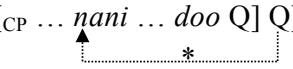
The possible structures of (7) are indicated in (14a) and (14b), which are the structures corresponding to potential interpretations. (14a) is well-formed because Q establishes a local agreement relation with the yes/no-operator in the matrix clause and the *wh*-operator in the embedded clause. (14b) is ill-formed because the matrix Q agrees with the embedded *wh*-phrase, which bears a closer agreeing element, or the embedded Q, in the same clause. Hence, (7) is interpreted exclusively as a yes/no-question. Crucially, (14b) is ruled out by the failure of WH-Q Agree, a purely syntactic factor. Therefore, as far as (7) is concerned, we can state that syntax is responsible for the *wh*-island effects.

Let us now turn to (5), which constitutes a minimal pair of (7), with *ka* replaced with *ka dooka*.

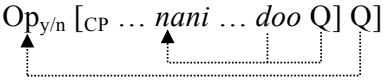
(5) John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
i. ??'What did John ask Tom whether Mary bought *t*?' [*wh*-question]
ii. ??'Did John ask Tom whether Mary bought what?' [yes/no-question]

Recall that there is a combination of *nani* and *ka dooka* in this sentence, which crucially causes the unacceptable status of (5), as is clear from (4) and (6). The proposed analysis provides (5i) with the structure in (15a) and (5ii) with the structure in (15b).

(15) a. *Wh*-question interpretation:



b. Yes/no-question interpretation:



(15a) is excluded for the same reason as (14b); that is, the agreement relation between the matrix Q and the embedded *wh*-phrase is nonlocal, since the closer embedded Q should agree with the *wh*-phrase. Therefore, the absence of the *wh*-question interpretation in (5), again, has a purely syntactic origin.

How then should the absence of the yes/no-question interpretation be explained? As illustrated in (15b), the failure of WH-Q Agree does not exist; in both CPs, WH-Q Agree takes place in a local fashion, although WH-Q Agree in the embedded CP is multiple, unlike (14a). More specifically, the embedded Q in (15b) agrees with the two operators, *doo* (i.e., a yes/no-operator) and *nani* (i.e., a *wh*-operator), thereby determining the scopes of both operators. Therefore, the absence of the yes/no-question interpretation in (5) is not derived syntactically.

In the next subsection, we will identify the cause of the awkwardness of (5ii) from another linguistic perspective.

4.2. Semantico-Pragmatic Factors: Presuppositional Contradiction and Referential Confinement

A yes/no-question presupposes the "disjunction of two propositions" (Lyons (1977:757)), which is best reflected on the form of indirect yes/no-questions in Japanese (see section 3.2):

(16) The structure of indirect yes/no-questions in Japanese:
$[_{CP} \ldots [_{CP}\ [TP] \vee [wh\text{-pro}]\ Q] \ldots]$ (= (13b))

On the other hand, a *wh*-question presupposes the "disjunction of a set of propositions" (Lyons (1977:758)). Taking these presuppositions into account, consider the contrast between (17a) and (17b):[7]

(17) a. John-wa [Mary-ga ano hon-o katta ka dooka] (= (6b))
John-Top Mary-Nom that book-Acc bought whether
siranai.
know-not
'John doesn't know whether Mary bought that book.'

[7] In using a *wh*-question, the speaker presupposes the disjunction of a set of positive propositions such that one of them is true in the real world. What the speaker presupposes in the use of a yes/no-question is the truth of the disjunction of a positive and a negative proposition. To the extent that these presuppositions are shared by the hearer, the questions can be answered felicitously. Here and below, the term *presupposition* is used in this sense.

b. ??John-wa [Mary-ga nani-o katta ka dooka] (= (4))
John-Top Mary-Nom what-Acc bought whether
siranai.
know-not
'John doesn't know whether Mary bought what.'

The sentences in (17) are both declarative counterparts of (5). In (17a), the presupposition is the disjunction of the proposition that Mary bought that book and the proposition that Mary did not buy that book; John does not know which one is true. No contradiction exists here. However, two contradictory presuppositions will arise in (17b).

As seen in (15b), the embedded structure of (17b) is syntactically licit, obeying the locality condition on WH-Q Agree. The embedded Q gives quantificational forces to the two distinct operators, *doo* (i.e., a yes/no-operator) and *nani* (i.e., a *wh*-operator), which after all will create two contradictory presuppositions. The relation between Q and *doo* derives the disjunctive presupposition of two propositions: Mary bought *x* (i.e., a positive proposition) and Mary did not buy *x* (i.e., a negative proposition); John does not know which one is true. The relation between Q and *nani* derives the disjunctive presupposition of many propositions: Mary bought something (i.e., a set of positive propositions; for example, Mary bought *Syntactic Structures*, Mary bought *Barriers*, …, and Mary bought *The Minimalist Program*); John does not know which one is true. The yes/no-question derived from the former relation presupposes the disjunction of a positive and a negative proposition; simultaneously, the *wh*-question derived from the latter relation presupposes the disjunction of a set of positive propositions. These two contradictory presuppositions co-occur in the embedded structure of (17b), hence the awkwardness of this sentence. In this way, we find *presuppositional contradiction* to be one key factor in capturing *wh*-island effects; obviously, this factor is a member of semantico-pragmatics rather than syntax.

Examples (17a) and (17b) constitute a minimal pair; the replacement of *nani* with *ano hon* makes the sentence acceptable, which reveals the existence of another semantico-pragmatic factor for *wh*-island effects. *Ano hon* is referentially confined in the sense that it has one single referent; *nani* is referentially unconfined since it derives the disjunctive presupposition of many propositions with the help of Q; in each proposition, the referent of *nani* varies. Thus, *referential confinement* is expected to be a different semantico-pragmatic factor; in what follows, we show that this factor serves to weaken the contradiction between the presuppositions of a yes/no-question and a *wh*-question.

Although *nani* is an inherently referentially unconfined item for the reason mentioned above, its referential domain will be confined when given a possible context. This expectation is borne out:

(18) ?John-wa [Mary-ga katta mono-no utino nani-o,
John-Top Mary-Nom bought thing-Gen of what-Acc
mottekita ka dooka] siranai.
brought whether know-not
'John doesn't know whether Mary brought what of the things she had bought.'

In (18), the punctuation put after the *wh*-phrase means an intonation break by which the acceptability of the sentence even improves. Suppose the following context. John knows that Mary bought *Syntactic Structures*, *Barriers*, and *The Minimalist Program*. One day he sees her and finds a book with a black cover partially visible in her bag. He thinks that it is *The Minimalist Program*, but he is not sure because *Syntactic Structures* also has a black cover. After he leaves her, he knows neither which of the books she brought with her nor whether what she brought with her was actually *The Minimalist Program* ('that' book that he saw in her bag). As argued above, the embedded structure of (17b) has two contradictory presuppositions at the same time; the same holds for the embedded structure of (18). Nonetheless, (18) is in a sharp contrast with (17b). Where does the difference come from? In (18), the context confines the referential domain of *nani*. Still, *nani* in (18) is not so completely confined as *ano hon* 'that book' because it derives an indirect *wh*-question presupposing the disjunction of three positive propositions through the quantification by Q. This *wh*-question co-occurs with the *ka dooka* clause (i.e., an indirect yes/no-question), which presupposes the disjunction of a positive and a negative proposition. The contradiction between these two presuppositions does not disappear in the end, but the referential confinement of *nani* in (18) narrows the domain of presuppositional contradiction. Therefore, we are left with the slight awkwardness of (18).

Now, let us return to (5).

(5) John-wa [Mary-ga nani-o katta ka dooka]
John-Top Mary-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal

i. ?? ‘What did John ask Tom whether Mary bought *t*?’ [*wh*-question]
ii. ?? ‘Did John ask Tom whether Mary bought what?’ [yes/no-question]

What is relevant here is interpretation (5ii), whose awkwardness is also likely due to the absence of the referential confinement of *nani*:

(19) ?John-wa [Mary-ga katta mono-no utino nani-o,
John-Top Mary-Nom bought thing-Gen of what-Acc
mottekita ka dooka] Tom-ni tazuneta no?
brought whether Tom-Dat asked Nominal
‘Did John ask Tom whether Mary brought what of the things she had bought?’

Suppose that (19) shares the same context as (18); the only different supposition is that Tom knows about the set of what Mary bought. In this context, (19) can be interpreted as a yes/no-question. Again, we find the referential confinement to play an essential role in (barely) permitting the occurrence of *nani* within the *ka dooka* clause.

There is a remaining example to be discussed (with (20b) from Watanabe (1992a:263)):

(20) a. (??)John-wa [Mary-ga nani-o katta ka dooka] (= (2a))
John-Top Mary-Nom what-Acc bought whether
dare-ni tazuneta no?
who-Dat asked Nominal
‘Who did John ask *t* whether Mary bought what?’

b. John-wa [dare-ga nani-o katta ka dooka]
John-Top who-Nom what-Acc bought whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
i. ?? ‘What did John ask Tom whether who bought *t*?’ [*wh*-question]
ii. ?? ‘Did John ask Tom whether who bought what?’ [yes/no-question]

(20a) is a sentence that Watanabe (1992a) judges to be acceptable as a *wh*-question requiring the value of the matrix *wh*-phrase *dare*; according to him, such an additional *wh*-phrase in the matrix clause renders a *wh*-island effect null (see section 2.1). In contrast, Watanabe judges (20b) less acceptable as a *wh*-question requiring the value of the embedded *wh*-phrase *nani* (cf. (20bi)), which means that a *wh*-phrase added to the embedded clause headed by *ka dooka* is silent on a *wh*-island

effect. (20bii) reflects our judgment on the interpretation as a yes/no-question.

Since (20a) is devoid of the referential confinement in question, Watanabe's (1992a) judgment that the sentence is acceptable as a *wh*-question requiring the value of the matrix *wh*-phrase *dare* is questionable. Rather, our analysis regards (20a) as remaining awkward in the absence of the referential confinement, about which the parenthesized double question mark is eloquent. His judgment might have resulted from the fact that a focused element added outside of the *ka dooka* clause attracted the informant to the matrix clause; so to speak, in the judgment, the informant ignores the existence of *nani* within the embedded clause headed by *ka dooka*. Unless that is the case, his judgment on (20a) is inexplicable. The plausibility of our analysis is evidenced by the following example:

(21) ?John-wa [Mary-ga katta mono-no utino nani-o,
John-Top Mary-Nom bought thing-Gen of what-Acc
mottekita ka dooka] Dare-ni tazuneta no?
brought whether who-Dat asked Nominal
'Who did John ask *t* whether Mary brought what of the things she had bought?'

The referential confinement of *nani* allows the sentence to be interpreted as a *wh*-question requiring the value of *dare* in the matrix clause.[8] Thus, Watanabe's judgment that (20a) is acceptable as the relevant *wh*-question turns out to be peripheral.

For (20b), it is reasonable to discuss it together with English data pointed out by Carl L. Baker (1969:60-61):[9]

(22) a. *I'm not sure whether who left or not.
b. We don't know whether or not the butler revealed who ate what.

[8] Sentence (i), to which Watanabe (1992a:272) gives a double question mark without parenthesis, can be interpreted, as it is, as a *wh*-question requiring the value of *dare* in the matrix clause when the embedded *wh*-phrase *dare* is referentially confined; that is, when it refers to all or some of the persons constituting a particular set already known in the context.

(i) (??) Dare-ga John-ni [dare-ga kita ka dooka] kiita no?
who-Nom John-Dat who-Nom came whether asked Nominal
'Who asked John whether who came?'

For me, the referential confinement effect emerges in the embedded subject *wh*-phrase case in (i) more easily than in the embedded object *wh*-phrase case in (20a). It is currently uncertain where this asymmetry should be ascribed, so we leave this question open for future investigation.

[9] My informant shares the same intuition that there is a grammatical contrast between (22a) and (22b).

This contrast shows that a (multiple) *wh*-question can be embedded within a *whether* clause. Consider the following example:

(23) John-wa [Mary-ga [dare-ga nani-o katta ka]
John-Top Mary-Nom who-Nom what-Acc bought SFP
akirakanisita ka dooka] Tom-ni tazuneta no?
revealed whether Tom-Dat asked Nominal
'Did John ask Tom whether Mary revealed who bought what?'

(23) is a sentence in which the embedded *wh*-question in (20b) is even embedded; in this case, the sentence becomes acceptable like the English sentence in (22b). The improvement observed is irrelevant to the referential confinement discussed above, for it is not the case that the two *wh*-phrases innermost embedded are confined in their referential domains.[10] Rather, the improvement results from quite a simple source. Notice that the structure of (23) is well-formed under the mechanism of WH-Q Agree proposed in section 3:

(24) Yes/no-question interpretation:
$[_{CP}$ John $Op_{y/n}$ $[_{CP}$ Mary $[_{CP}$ *dare* … *nani* … Q] revealed *doo* Q] Q]

There are three agreement relations in (24); they are well-established because each of them is local. Crucially, the relation between Q and *doo* is manifested in the next higher clause than the clause where the relation between Q and *dare/nani* is manifested, hence no contradiction between the presuppositions derived from the relations. Therefore, (23) is impeccable.

As the final remark of this section, it is worthwhile to note that the semantico-pragmatic account developed in this subsection can be an essential characterization for the concepts of "D-linking" (see e.g., Pesetsky (1987)) and "referentiality" (see e.g., Rizzi (1990)); in the syntactic literature, they have long been perceived as weakening island violations, but their properties have remained opaque. In other words, both concepts reduce to the semantico-pragmatic nature that presuppositional contradiction is weakened by referential confinement. Crucially, this significant reduction has been brought about based on the careful demarcation of syntactic and semantico-pragmatic factors. In section 5, we will explore some further consequences of the proposed analysis for English as well as Japanese.

[10] (20bii) will be acceptable also by the referential confinement of both *wh*-phrases. Here, we do not go into the details for the sake of simplicity.

5. Consequences

5.1. Wh-*Island Effects in English*

Since Huang (1982), it has generally assumed, at least in preminimalist frameworks, that LF movement, rather than narrow-syntactic movement, is not subject to Subjacency. The relevant contrast is cited from Watanabe (1992a:264):

(25) a. Who did John ask *t* whether Mary bought what?
b. ?? What did John ask Tom whether Mary bought *t*?

In section 3.1, we identified *wh*-movement in English with internal Merge without WH-Q Agree under the mechanism of clausal typing and scope determination (see (8) versus (9)). Within this theoretical framework, it is not the case that [+Q] C attracts a relevant *wh*-phrase to Spec-C; rather, spontaneous *wh*-movement values CP as [+Q] (see Sakamoto (2013) for related discussion). Given that *wh*-movement involves no WH-Q Agree and that (internal) Merge is not constrained (see Chomsky (2008)), (weak) island violations in English should reduce not to syntax but to semantico-pragmatics (cf. Boeckx (2008)).

In contrast to the prevailing description of (25), my informant detects strong *whether*-island effects. More specifically, he accepts neither (26a) nor (26b), with (26a, b) being slightly modified versions of (25a, b), even if the same context as in (18) is offered (see section 4.2):

(26) a. *Who did John ask *t* [whether Mary brought what]?
b. *What did John ask Tom [whether Mary brought *t*]?
(cf. *Which book did John ask Tom [whether Mary brought *t*]?)

According to him, in both cases, the co-occurrence of *whether* and *what* in the same clause feels confusing.

The next paradigm makes the same point:[11]

(27) a. *John didn't know [whether Mary brought what].

[11] However, the same informant finds a difference between (26a), (27), and (28) on the one hand and the next sentences on the other (with (ia) from Carl L. Baker (1970:215) and (ib) from Watanabe (1992a:256)):

(i) a. Who remembers where we bought which book?
b. Who likes books that criticize who?

The questions in (i) can both require the value of the in-situ *wh*-phrase, for which the informant shares the same intuition.

b. *Who knows [whether Mary brought what]?

(28) a. *Did John ask Tom [whether Mary bought what]?

b. *Did John know [whether who brought what]?

Moreover, the informant does not accept the cleft version of (26b):

(29) *What is it that John asked Tom [whether Mary brought *t*]?

As illustrated in (29), clefting does not obviate the strong *whether*-island effect detected by the informant. In this way, the judgment of my informant indicates the consistent refusal of the combination between *whether* and *what* in the same clause, which in turn shows that the referential confinement observed in Japanese is unavailable in English (see section 4.2), as far as the judgment of my informant is concerned.

The difference in acceptability between (25) on the one hand and (26), (27), (28), and (29) on the other confirms that our theoretical framework, where (weak) island violations in English are attributed to semantico-pragmatic factors, is on the right track. That is, not all speakers tolerate a weakening of presuppositional contradiction by referential confinement because of its semantico-pragmatic nature. Not permitting the weakening, my informant detects strong *whether*-island effects. Under any attraction-based syntactic theory for *wh*-islands, it would be impossible to deal with this sort of difference in acceptability with no consideration of semantico-pragmatic factors of *wh*-island effects.[12]

In sections 5.2 and 5.3, we will further consider what the judgment of my informant means within the present theoretical framework, by contrasting English with Japanese.

5.2. Pseudo-Clefting and Scrambling in Japanese

We saw in the preceding subsection that the informant judges unacceptable all instances with the combination of *whether* and *what* in the same clause. Here again, our concern returns to Japanese to ponder theoretical implications of the informant's judgments. The question to be asked as a first step towards the goal is: Does Japanese have different strategies for obviating the offending effect yielded by the combination of *ka dooka* and *nani* in the same clause? The answer is affirmative; that is, Japanese has two more syntactic environments where the

[12] Under this reasoning, the grammatical contrast between (25a) and (25b) suggests that the same speaker allows the referential confinement of *what* in the former but not in the latter. It is immediately unclear how we take care of this undesirable paradoxical situation in the current framework, so we leave this question open for future investigation.

offending effect is obviated, which offer complete implementations of referential confinement.

One is a pseudo-cleft environment, as in (30), and the other is a scrambling environment, as in (31).

(30) [John-ga [Mary-ga tabeta ka dooka] Tom-ni tazuneta
John-Nom Mary-Nom ate whether Tom-Dat asked
no] wa nani?
Nominal Top what
'What is what John asked Tom whether Mary ate?'

(31) (?) John-wa nani-o(,) [Mary-ga *t* tabeta ka dooka]
John-Top what-Acc Mary-Nom ate whether
Tom-ni tazuneta no?
Tom-Dat asked Nominal
'What did John ask Tom whether Mary ate?'

Both (30) and (31) are acceptable for me as a *wh*-question requiring the value of *nani* (see footnote 14 for the importance of an intonation break put after the *wh*-phrase in (31)); they are in sharp contrast with (5), in which *nani* cannot take scope over the matrix clause.

According to Mihara and Hiraiwa (2006), a pseudo-cleft sentence can be generated by a derivation involving no *wh*-movement. The structure they postulate is given in (32) in conjunction with our analysis:

(32) $[_{CP}$ John $[_{CP}$ Mary ate pro_i *doo* Q] Tom asked no_i] Top $nani_i$ (cf. (30))

In (32), the *wh*-phrase is base-generated in a different position from within the *ka dooka* clause; the object position of the *ka dooka* clause is occupied by the null pronoun which becomes referentially identical to *nani* as a result of the derivation. The *ka dooka* clause in (32) is almost equivalent to the following proposition-level disjunctive phrase:

(33) $[_{CP}$ $[_{TP}$ Mary ate it] ∨ $[_{TP}$ Mary didn't eat it] Q]

In (33), the object of the verb is a pronoun, which is referentially confined like *ano hon* 'that book'; thus, pseudo-cleft environments in Japanese serve to obviate the offending effect created by the combination of *ka dooka* and *nani* in the same clause.

Saito's (1985) and Takahashi's (1993) observations are highly suggestive in exploring the structure of (31). Saito (1985) proposes that the target of scrambling is a TP-adjoined position; adjunction is an instance of A′-movement. Meanwhile, Takahashi (1993:661) makes the following descriptive generalization on movement of *wh*-phrases in Japanese: A′-movement of a *wh*-phrase to the initial position of a clause headed by a [+WH] COMP counts as *wh*-movement in Japanese. Aggregating their proposals, we can obtain the structure in (34) in conjunction with the proposed analysis.

(34) $[_{CP}$ John $[_{TP}$ *nani*$_i$ $[_{TP}$ $[_{CP}$ Mary ate t_i *doo* Q] Tom asked]] … Q] (cf. (31))

Scrambling raises *nani* to a matrix TP-adjoined position; in that position, which is in the minimal search domain of the matrix Q, *nani* undergoes WH-Q Agree.[13] Consequently, (31) behaves as a *wh*-question requiring the value of *nani*.[14]

Here, the question arises as to how *nani* is referentially confined. Although the scrambling of *nani* in (34) is viewed as *wh*-movement under the present analysis, the movement is irrelevant to the referential confinement of *nani*. Under the copy theory of movement (cf. Chomsky (1993)), *nani* should leave its copy at the object position of the *ka dooka* clause, which captures the meaning of argument structure (cf. Chomsky (2008)). Thus, (34) does not ensure the referential confinement of *nani* for the existence of the lower copy; a different structure is needed for (31).

Structure (32) gives a clue for the appropriate structure of (31). Boeckx

[13] Remember that *wh*-movement, or internal Merge, is not constrained (cf. Chomsky (2008)). Although there exists a *wh*-movement operation (precisely, scrambling eventually interpreted via WH-Q Agree as *wh*-movement) outside of the clause headed by *ka dooka* in (34), that movement itself is not constrained. Hence, (34) constitutes a legitimate derivation.

[14] Takahashi (1993) observes that a similar example to (31) can be interpreted not only as a *wh*-question but also as a yes/no-question; the fact observed is shown to follow from his theory. I am skeptical about his observation itself, for the offending effect in question seems to occur under the yes/no-question interpretation. The phonological pattern without putting an intonation break after the *wh*-phrase will correspond to the yes/no-question interpretation under discussion, which under our analysis is derived as follows:

(i) $[_{CP}$ John $[_{TP}$ $Op_{y/n}$ $[_{TP}$ *nani*$_i$ $[_{TP}$ $[_{CP}$ Mary ate t_i *doo* Q] Tom asked]] nominal Q]

In (i), the embedded Q agrees with *nani* in the base position, and then *nani* undergoes scrambling to a matrix TP-adjoined position; after that, the invisible yes/no-operator (i.e., $Op_{y/n}$) occupies a higher TP-adjoined position, and in that position it establishes an agreement relation with the matrix Q. This derivation itself is licit because WH-Q Agree holds in a local fashion in both CPs. The problem is in the embedded CP; that is, two types of WH-Q Agree relations create two contradictory presuppositions, as discussed in section 4.2, hence the awkwardness of this interpretation.

(2008) looks upon *wh*-in-situ as one instance of resumption strategies. This idea is attractive, but we cannot adopt it the way it is because it is based on Watanabe's (1992a) null operator movement analysis; under our analysis, in-situ *wh*-phrases always remain in situ without undergoing null operator movement (cf. S&I (2014, 2015, 2016a), who find certain rhetorical questions, rather than normal questions, to involve *wh*-movement of the sort observed in English; see also S&I (2016b), who confirm, by analyzing Japanese particle-stranding phenomena, that *wh*-movement in Japanese, if any, is associated with a marked semantic interpretation). Unless the in-situ *wh*-phrase in (31) undergoes scrambling outside of the *ka dooka* clause, the sentence is not interpreted as a *wh*-question requiring the value of *nani*. In this sense, this movement functions as a resumption strategy. According to Boeckx (2003, 2008, 2012), resumption structures are essentially different from non-resumption structures. Based on his proposal on resumption structures, (31) is derived as follows:

(35) $[_{CP}$ John $[_{TP}$ *nani*$_i$ $[_{TP}$ $[_{CP}$ Mary ate $[_{DP}$ pro$_i$ $t_i]$ *doo* Q] Tom asked]] … Q]
(cf. (31))

As shown in (35), *nani* is merged with the null resumptive pronoun in the base position and constitutes a complex DP (see Boeckx (2003:48) for an illustration of a language employing null resumptive pronouns); later, *nani* is raised via scrambling to the position that can establish an agreement relation with the matrix Q. In this derivation, the null resumptive pronoun is left at the object position of the *ka dooka* clause, which guarantees the referential confinement of *nani*.[15]

5.3. The Availability of Resumption in English and Japanese

As seen in section 5.1, my informant totally refuses the combination between *whether* and *what* in the same clause. Only the crucial data for the present purposes are repeated here as (36).

(36) a. *What did John ask Tom [whether Mary brought *t*]? (= (26b))
b. *What is it that John asked Tom [whether Mary brought *t*]? (= (29))

Given that English, unlike Japanese, generally does not license null pronominals, it fails to exploit the resumption strategies given in (37). Accordingly, (36a) should

[15] There is a possibility that a pseudo-cleft sentence like (30) could be derived based on the Boeckx-style resumption, but we have refrained from going into details about this due to space limitations.

be derived as (38a) and (36b) as (38b).[16]

(37) a. What$_i$ did John ask Tom [whether Mary brought [$_{DP}$ pro$_i$ t_i]]
b. What$_i$ is it *Op*$_i$ that John asked Tom [whether Mary brought [$_{DP}$ pro$_i$ t_i]]

(38) a. What$_i$ did John ask Tom [whether Mary brought t_i]
b. What$_i$ is it *Op*$_i$ that John asked Tom [whether Mary brought t_i]

Under the structures in (38), which involve no null resumptive pronouns at their base positions, the sentences in (36) receive no referential confinement of *what*, hence the unacceptable status of (36). Within the proposed analysis, English exercises no WH-Q Agree (see section 3.1), which means that the violation observed in (36) does not reduce to that mechanism (see section 5.1). *Wh*-movement, or internal Merge, is not constrained (see Boeckx (2008), Chomsky (2008)), so the violation should be explained by the absence of resumption and thus the absence of the referential confinement of *what*.

5.4. Remaining Issues

We saw in section 5.1 that my informant shows strong *whether*-island effects in that they are not obviated by the referential confinement of *what*; however, they improve under the embedding of a *wh*-question in the innermost clause (see section 4.2):

(22) a. *I'm not sure whether who left or not.
b. We don't know whether or not the butler revealed who ate what.

Similar improvement is observed also in the following paradigm ((39a) is cited from Carl L. Baker (1969:61); the other examples are based on it):

(39) a. Martin knows which book Wes can't decide whether to buy.
b. Martin knows which book Wes can't decide whether he should buy.

(40) a. Which book does Martin know (that) Wes can't decide whether to buy?
b. Which book does Martin know (that) Wes can't decide whether he should buy?

(41) a. Which book is it that Martin knows (that) Wes can't decide whether to buy?

[16] The structures in (38) are based on É. Kiss (1998), who assumes a cleft structure in English to involve null operator movement.

b. Which book is it that Martin knows (that) Wes can't decide whether he should buy?

According to my informant, all the sentences are stilted and awkward but understandable and acceptable; the construction *whether to buy* flows more smoothly than *whether he should buy*.

Indeed, we find embedded structures also in the paradigm, but the direction of embedding is different between (22) on the one hand and (39), (40), and (41) on the other. In the paradigm, embedding applies not to the inside of, but to the outside of, the *whether* clauses; still, the improvement is observed. The difference is not immediately clear; only the property of embedding is shared between the former and the latter.

Meanwhile, the informant finds the next sentence from Abrusán (2014:149) impeccable:

(42) How many books do you know whether you should burn?

According to him, this question can be answered like *I know of three books* (see Abrusán (2014) for possible and impossible interpretations of this sentence). This sentence contains no deep embedding; nonetheless, it is acceptable. We find (42) to be different from the examples above in that it has a *how many wh*-phrase; however, we cannot make a useful generalization that encompasses all the data. Abrusán (2014) attempts to explain various kinds of weak island cases including (42) from her sematico-pragmatic theory, which deserves special consideration because of its theoretical coherence. Although there are many important questions remaining, we leave them open for future investigation.

6. Conclusion

In this article, we have shown that various linguistic phenomena connected with *wh*-island effects result from the interaction between syntactic and semantico-pragmatic factors. This analysis supports the non-movement approach to *wh*-questions in Japanese (see Watanabe (2006), S&I (2014, 2015, 2016a)), an interesting result considering the substantial influence that Watanabe's (1992a, b) work on the movement approach has had on researchers since the early 1990's. Our analysis also helps to reveal important empirical and theoretical differences between English and Japanese. Since the results obtained in this article are based on a limited empirical domain, further discussion is required in our future research.

REFERENCES

Abrusán, Márta (2014) *Weak Island Semantics*, Oxford University Press, Oxford.

Baker, Carl L. (1969) *Indirect Questions in English*, Doctoral dissertation, University of Illinois.

Baker, Carl L. (1970) "Notes on the Description of English Questions: The Role of an Abstract Question Morpheme," *Foundations of Language* 6, 197-219.

Boeckx, Cedric (2003) *Islands and Chains: Resumption as Stranding*, John Benjamins, Amsterdam.

Boeckx, Cedric (2008) *Bare Syntax*, Oxford University Press, Oxford.

Boeckx, Cedric (2012) *Syntactic Islands*, Cambridge University Press, New York.

Cable, Seth (2010) *The Grammar of Q: Q-Particles,* Wh-*Movement and Pied-Piping*, Oxford University Press, Oxford.

Cheng, Lisa L.-S. (1997) *On the Typology of* Wh-*Questions*, Garland, New York.

Chomsky, Noam (1993) "A Minimalist Program for Linguistic Theory," *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, ed. by Kenneth L. Hale and Samuel J. Keyser, 1-52, MIT Press, Cambridge, MA.

Chomsky, Noam (2008) "On Phases," *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, ed. by Robert Freidin, Carlos P. Otero and Maria L. Zubizarreta, 133-166, MIT Press, Cambridge, MA.

É. Kiss, Katalin (1998) "Identificational Focus versus Information Focus," *Language* 74, 245-273.

Harada, Kazuko I. (1972) "Constraints on WH-Q Binding," *Studies in Descriptive and Applied Linguistics* 5, 180-206.

Huang, C.-T. James (1982) *Logical Relations in Chinese and the Theory of Grammar*, Doctoral dissertation, MIT.

Ikarashi, Keita (2014) "The Distributional Property of the Japanese Sentence-Final Particle *Ka*," *Tsukuba English Studies* 33, 63-82.

Kuroda, S.-Y. (1965) *Generative Grammatical Studies in the Japanese Language*, Doctoral dissertation, MIT.

Larson, Richard K. (1985) "On the Syntax of Disjunction Scope," *Natural Language and Linguistic Theory* 3, 217-264.

Lyons, John (1977) *Semantics: Volume 2*, Cambridge University Press, Cambridge.

Makino, Seiichi and Michio Tsutsui (1986) *A Dictionary of Basic Japanese Grammar*, The Japan Times, Tokyo.

Makino, Seiichi and Michio Tsutsui (2008) *A Dictionary of Advanced Japanese Grammar*, The Japan Times, Tokyo.

Martin, Samuel E. (1988) *A Reference Grammar of Japanese*, Charles E. Tuttle, Tokyo.

Mihara, Ken-ichi and Ken Hiraiwa (2006) *Sin Nihongo-no Toogokoozoo: Minimarisuto Proguramu-to Sono Ooyoo* (The Syntactic Structures of Japanese (New Edition)), Shohakusha, Tokyo.

Nishigauchi, Taisuke (1990) *Quantification in the Theory of Grammar*, Kluwer, Dordrecht.

Nishigauchi, Taisuke and Yasuo Ishii (2003) *Eego-kara Nihongo-o Miru* (Looking at Japanese from English), Kenkyusha, Tokyo.

Pesetsky, David (1987) "WH-in-situ: Movement and Unselective Binding," *The Representation of (In)definiteness*, ed. by Eric J. Reuland & Alice G. B. ter Meulen, 98-129, MIT Press, Cambridge, MA.

Rizzi, Luigi (1990) *Relativized Minimality*, MIT Press, Cambridge, MA.

Saito, Mamoru (1985) *Some Asymmetries in Japanese and Their Theoretical Implications*, Doctoral dissertation, MIT.

Sakamoto, Akihiko (2013) *A Theory of Labeling in the Minimalist Program: Valuation in Merge and Its Application*, Doctoral dissertation, University of Tsukuba.

Sakamoto, Akihiko and Keita Ikarashi (2014) "*Wh*-Movement as a Scope Determination Operation in Japanese," *MIT Working Papers in Linguistics* 73*: Proceedings of Formal Approaches to Japanese Linguistics* 7, 143-154.

Sakamoto, Akihiko and Keita Ikarashi (2015) "Universal Grammar and the Mechanism of Structure Indication: A Case Study of the *Nani-o* X-*o* Construction," *Tsukuba English Studies* 34, 33-53.

Sakamoto, Akihiko and Keita Ikarashi (2016a) "*Wh*-Movement and Rhetorical Yes/No-Questions in Japanese," paper presented at Formal Approaches to Japanese Linguistics 8, February 18-20, 2016, Mie University.

Sakamoto, Akihiko and Keita Ikarashi (2016b) "Japanese Particle-Stranding as Nonrestrictive Relativization," *Proceedings of the 18th Seoul International Conference on Generative Grammar*, 496-514.

Swan, Michael (2016) *Practical English Usage*, Oxford University Press, Oxford.

Takahashi, Daiko (1993) "Movement of *Wh*-Phrases in Japanese," *Natural Language and Linguistic Theory* 11, 655-678.

Teramura, Hideo (1991) *Nihongo-no Sintakusu-to Imi III* (The Syntax and Semantics of Japanese III), Kurosio, Tokyo.

Tsai, W.-T. Dylan (1994) *On Economizing the Theory of A'-Dependencies*, Doctoral dissertation, MIT.

Watanabe, Akira (1992a) "Subjacency and S-Structure Movement of *Wh*-in-situ," *Journal of East Asian Linguistics* 1, 255-291.

Watanabe, Akira (1992b) "*Wh*-in-situ, Subjacency, and Chain Formation," *MIT Occasional Papers in Linguistics* 2, MIT Press, Cambridge, MA.

Watanabe, Akira (2006) "The Pied-Piper Feature," Wh-*Movement: Moving on*, ed. by Lisa L.-S. Cheng and Norbert Corver, 47-70, MIT Press, Cambridge, MA.

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