

Universal Grammar and the Mechanism of Structure Indication: A Case Study of the *Nani-o X-o* Construction*

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1. Introduction

The main concern of generative grammar is to provide a simple definition for the contents of Universal Grammar (UG), which is a deductive system enabling us to generate abstract syntactic structures. When formulating a theory of the deductive system based on data from performance, generativists premise the existence of “an ideal speaker-[hearer], in a completely homogeneous speech community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance” (Chomsky (1965:3)). While the generative inspection has been revealing the nature of language to a significant degree, certain important aspects of language are abstracted by the idealization. Among them are principles of language use. As long as the deductive system is “actually used in the course of speech production and comprehension” (Newmeyer (1998:106)), total explanation of linguistic phenomena can call upon consideration of language use.¹

According to Frederick J. Newmeyer, grammar is an internal, autonomous system, but it can be affected by external functional forces, such as pressure for parsing efficiency; that is, “some grammatical features can be attributed to an accommodation of the grammar to the parser” (Newmeyer (1998:106)).² Under internal explanation, “a set of facts fall out as a consequence of the deductive structure of a particular theory of grammar”; under external explanation, “a set of facts is derived as a consequence of principles outside of the domain of grammar” (Newmeyer (1998:96)). A series of his works confirms that internal and external explanations are not contradictory but complementary (cf. Newmeyer (2003:687)). This spirit underlies the present study, which seeks a full account of a complex linguistic phenomenon assumed to involve aspects of language use on the basis of a complementary theory of form (i.e. UG-internal aspects of a particular system) and function (i.e. UG-external aspects of a particular system).

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¹ Following Newmeyer (2005:note 4), we define language use as “actual utterances by speakers produced in real-time.”

² Although Newmeyer (1998:section 3.5.2.2) also characterizes pressure for structure-concept iconicity as an important external motivating factor for determining grammatical structure (see also Newmeyer (1992)), we put it aside simply as irrelevant to the discussion here and concentrate on pressure for parsing efficiency.

In this article, our interest will turn to an example of the sort given in (1):³

- (1) Nani-o bakagetakoto-o yuu nda?
 what-Acc rubbish-Acc say Nominal.Cop
 ‘Why do you talk rubbish? (You shouldn’t say that thing.)’

(1) is a unique linguistic form in Japanese, what Konno (2004) calls the *nani-o X-o* construction, in which the accusative-marked *wh*-phrase *nani-o* appears before the accusative-marked object of a transitive verb. This construction is said to have the illocutionary force of accusation exclusively (cf. Konno (2004), Amano (2008), Takami (2010)): (1) is being uttered to reproach the hearer for talking rubbish.⁴

From the generative (minimalist) perspective, which requires a linguistic form to involve no redundant element, the occurrence of an accusative-marked *wh*-phrase in (1) looks idiosyncratic at the first glance, because this element is unwanted syntactically; unlike in normal questions (which are used to elicit some information

³ The following abbreviations are used in the glosses of examples in this article: Acc = accusative, Comp = complementizer, Cop = copula, Dat = dative, Neg = negation, Nominal = Nominalizer, Pol = polite, Prog = progressive, Quot = quotative particle, SFP = sentence-final particle, Top = topic.

⁴ This observation is supported by the following contrast from Konno (2004:9):

- (i) a. Taroo-wa “Nani-o bakagetakoto-o yuu no?” to Hanako-o
 Taro-Top what-Acc rubbish-Acc say Nominal Quot Hanako-Acc
 hihansita.
 accused
 ‘(Lit.) Taro accused Hanako, “Why do you talk rubbish?”’
 b. *Taroo-wa “Nani-o bakagetakoto-o yuu no?” to Hanako-ni
 Taro-Top what-Acc rubbish-Acc say Nominal Quot Hanako-Dat
 tazuneta.
 asked
 ‘Taro asked Hanako, “Why do you talk rubbish?”’

According to Yamanashi (2002), the illocutionary force of an utterance can be expressed by its quoting verb. Konno (2004) shows, based on this claim, that the *nani-o X-o* construction specializes in expressing the illocutionary force of accusation. It can appear in the quoted part of an accusatory verb (as in (ia)) but not in that of a request verb (as in (ib)).

In addition, the construction sounds bizarre when appearing in a context where the speaker has no intention to accuse the hearer:

- (ii) #Nani-o Ringo-o tabe-teiru no? Oisi soda ne.
 what-Acc apple-Acc eat-Prog Nominal delicious looks SFP
 ‘Why are you eating an apple? It looks delicious.’

As is clear from the second utterance, the speaker is expressing his positive attitude towards the event in question; it is unlikely that he is accusing the hearer of eating an apple. Contexts like (ii) do not normally license the use of this construction. Notice that the *nani-o X-o* construction in (ii) becomes acceptable if it is used humorously, but we leave such a usage out of consideration here.

from the hearer), the *wh*-phrase does not receive a value specification from the hearer, and it is not even a constitutive part of the proposition in question. We will argue in this article that the seemingly odd existence of the *wh*-phrase in (1) and other peculiar properties with this construction are explained totally through a complementary theory of form and function of the sort stated above.

This article is organized as follows. Section 2 introduces a deductive system of clausal typing and scope determination, based on the analyses developed by Sakamoto and Ikarashi (hereafter, S&I) (2014) and by Larson (1985), and then proposes an external functional system for parsing efficiency that we will refer to as structure indication; both systems constitute a complementary theory of form and function. Section 3 shows that this theory uncovers the *nani-o X-o* construction as a rhetorical yes/no-question, in which a UG-internal force (i.e. invisible *wh*-movement as a purely syntactic scope determination operation) interacts with a UG-external force (i.e. overt *wh*-phrase realization as structure indication). Section 4 concludes this article with a prospect for future research.

2. A Complementary Theory of Form and Function

In this section, we will first show a deductive system of clausal typing and scope determination which allows Larson's (1985) analysis of an indirect yes/no-question to be reinterpreted (see section 2.1) and then discuss the importance of what we call structure indication, which functions as a UG-external force regulating parsing efficiency (see section 2.2).

2.1. Internal System

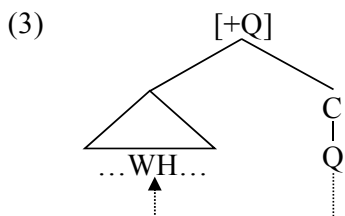
2.1.1. Clausal Typing and Scope Determination

In S&I (2014), we propose, based on Cheng (1997), that question formation (in Japanese) is decomposed into two parts: clausal typing and scope determination (see Sakamoto (2013) for a generalized version of clausal typing within the theory of phases). To understand this proposal, consider the next example from S&I (2014:144):

- (2) Kimi-wa nani-o tabe-teiru nda?
 you-Top what-Acc eat-Prog Nominal.Cop
 i. 'What are you eating?' [normal question]
 ii. 'What are you eating? (You shouldn't eat it.)' [rhetorical question]

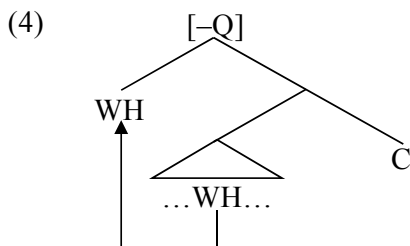
As shown in the English translations, (2) can be interpreted as either a normal or rhetorical question, with the former having a rising intonation and the latter a

non-rising intonation.⁵ Japanese, unlike English, does not store *wh*-words as WH-Q complexes in the Lexicon (cf. Nishigauchi (1990), Watanabe (1992a, b), Tsai (1994)); thus, in normal question formation, Q and its relative *wh*-phrase enter independently into the syntactic computation, establishing a local relation called WH-Q binding by Harada (1972), which presumably reduces to Agree within a minimalist framework:⁶



The appearance of Q in the domain of C fixes the clause type as [+Q], while the local binding of the *wh*-phrase by Q identifies its scope-taking position, or the clausal domain over which the *wh*-phrase has an effect.

Moreover, we propose under this mechanism that rhetorical question formation involves narrow-syntactic movement of an entire *wh*-phrase to Spec-C, which is termed “rhetorical *wh*-movement”:



A rhetorical question does not function as a question; rather, it has the force of a strong assertion, expressing the speaker’s accusation against what the hearer is doing at the time of utterance (cf. Quirk et al. (1985:825)), which implies the lack of Q in the domain of C. The absence of Q types the relevant clause as [-Q]. Since a rhetorical question is devoid of Q, which serves as a scope indicator in normal

⁵ Assuming that both *wh*-questions and yes/no-questions are essentially the same (see S&I (2014:note 10)), we will just use terms like normal questions and rhetorical questions, irrespective of whether relevant sentences are, in essence, *wh*-questions or yes/no-questions, except for the purposes of emphasis or contrast.

⁶ We assume, contra the standard approach to Q in generative grammar, that it is a more abstract entity that has no direct phonological reflection. Under this assumption, Q simply makes a clause interrogative syntactically, and the interrogativity surfaces in a few possible ways. See section 2.2 for details.

question formation, the *wh*-phrase must manage to determine its domain of influence by itself. The only way is rhetorical *wh*-movement, which raises the whole *wh*-phrase overtly to Spec-C, thus working as a “last resort operation for scope determination.”⁷ The paradoxical situation where the *wh*-phrase appears within the clause type [-Q] will induce a rhetorical question interpretation (see note 11 for related discussion).

In this way, both normal and rhetorical question formation falls under the mechanism of clausal typing and scope determination.

2.1.2. *Yes/No-Operators Adjoined to the Proposition TP*

Larson (1985:section 3.2) argues, with an instance of the “hidden *or not* disjunction” in English, that the yes/no-operator (the conjunction node [_{CONJ} *whether or not*] in his term) is adjoined to the proposition TP:

- (5) a. I know whether John should read fiction.
 b. I know [_{CP} *whether*_i [_{TP} [_{CONJ} *t_i or not*] [_{TP} John should read fiction]]]

Sentence (5a) contains the *whether* complement as an indirect yes/no-question, in which the visible yes/no-operator (i.e. *whether*) works as a [+WH] scope indicator for the hidden *or not* disjunction. As shown in (5b), the structure for (5a), *whether* is raised from the conjunction node of the disjoined TP to Spec-C. Larson motivates this approach where yes/no-operators originate in lower positions such as TP, but not directly in the domain of C, by showing that it gives a principled explanation for several phenomena, including long-distance dependencies and island effects that indirect yes/no-questions display.⁸

⁷ Sprouse (2007:574) points out that the following sentence shows an island violation:

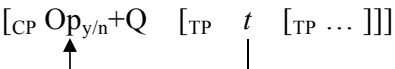
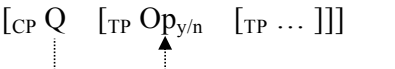
- (i) * [_{IP} John-wa [_{Adj} kare-no okusan-ga nani-o katta kara] okoru-to
 John-Top he-Gen wife-Nom what-Acc bought because get angry-Comp
 iu no.
 say Nominal
 ‘What would John get angry because his wife bought?’
 ‘There is nothing such that John would get angry because his wife bought that thing.’

Suppose that the sentence is intended to express accusation. Then, the *wh*-phrase is not allowed to appear in the island. Following S&I (2014), we can ascribe the ungrammaticality in (i) not to the island violation but to the position of the *wh*-phrase. In a rhetorical question, the *wh*-phrase must move to the matrix Spec-C. Nevertheless, the *wh*-phrase *nani-o* in (i) occupies the in-situ position, which prevents this element from fixing its scope. That is why this sentence is ungrammatical.

⁸ This analysis is compatible with the mechanism of clausal typing and scope determination, because English stores *wh*-words as WH-Q complexes in the Lexicon (see section 2.1.1). Consider, for example, the case of an object *wh*-question, in which the *wh*-phrase is placed in object position at the initial stage of derivation and then moves to Spec-C at later computation. Since Q

The intuition behind Larson’s analysis of (5a) would be as follows: the proposition *I know whether John should read fiction* is equal to the proposition *I know either that John should read fiction or that John shouldn’t read fiction*, whichever happens to be true (cf. Larson (1985:225-226)). The conjunction node [CONJ *whether or not*] functions to introduce the proposition TP disjunctively into the derivation. In light of the deductive system developed in the previous subsection, *whether* moves to Spec-C at later computation simply for the purpose of clausal typing and scope determination, because *wh*-words in English subsume Q, which fixes the scope of its relative in-situ *wh*-phrase in Japanese normal question formation (see also note 8).

Adapting Larson’s analysis outlined here to root yes/no-questions, we can postulate with the mechanism of clausal typing and scope determination that yes/no-operators are adjoined to the proposition TP (here, the conjunction node [CONJ *whether or not*] is simply paraphrased into $Op_{y/n}$, where ‘y’ stands for *yes* and ‘n’ for *no*):

- (6) a. *Wh*-movement for English:
 $[_{CP} Op_{y/n}+Q \ [_{TP} t \ [_{TP} \dots]]]$

- b. WH-Q binding for Japanese:
 $[_{CP} Q \ [_{TP} Op_{y/n} \ [_{TP} \dots]]]$


Although both languages are different in that English exploits *wh*-movement (as in (6a)), and Japanese utilizes WH-Q binding (as in (6b)), to meet the requirements of clausal typing and scope determination, the essence in normal question formation remains invariant.

Summarizing section 2.1, we can conclude, based on S&I (2014) and Larson (1985), that a yes/no-operator can be base-generated such that it is adjoined to the proposition TP on which the focus of the question is put; in normal question formation, that operator is raised to Spec-C in English, and is bound by Q in Japanese, under the deductive system of clausal typing and scope determination. In section 2.2, we will discuss the importance of the mechanism of structure indication as a UG-external force regulating parsing efficiency, which makes it possible for

and WH (or an indeterminate in Kuroda’s (1965) term, which Akira Watanabe adopts later) are fused in English, they cannot enter separately into the syntactic computation. While Q wants to determine the clause type, WH wants to fix the scope of the whole *wh*-phrase. The only possible option is *wh*-movement, whereby the requirements of clausal typing and scope determination are met at the same time. The same analysis holds true for (5b).

any deductive system to be exploited efficiently in the course of speech production and comprehension.

2.2. *External System: Mechanism of Structure Indication*

According to Newmeyer (1998:161), there is no reasonable way of excluding the possibility that aspects of an autonomous system are motivated functionally. As he states it with a chess analogy:

The principles of chess, like those of a generative syntax, form an autonomous system. That is, the layout of the board, pieces, and possible moves make no reference to principles from outside the game itself. Through a mechanical application of these principles, every 'grammatical' game of chess can be 'generated.' But the 'autonomy of chess' does not exclude the possibility that aspects of the system were motivated functionally. Perhaps its original developers worked out the most optimal set of moves to make chess as satisfying a pastime as possible or over time players themselves have exerted an influence on the rules (say, by tacitly agreeing on changes in them).

And he continues:

[I]n any actual game of chess, the players have free choice as to which pieces they choose to move and where to move them, subject to the rules of the game. Such factors are, of course, irrelevant to the autonomy of chess. By the same reasoning, the autonomy of syntax is not challenged by the fact that external factors may have affected the grammar of some language or by the fact that a speaker of a language can choose what to say at a particular time. The only issue, as far as the autonomy of syntax is concerned, is whether one's syntactic competence incorporates such external motivating factors. As we have seen, it does not do so. In short, the autonomy of syntax maintains that as a synchronic system, grammatical principles have an internal algebra. This fact, however, does not exclude the possibility that pressure from outside the system might lead to a changed internal algebra.

These quotes are quite instructive when we consider how a system motivated UG-externally is. We saw in section 1 that Newmeyer (1998) defines pressure for parsing efficiency as a plausible external functional force (see also note 2). Along this line of approach, we would like, in what follows, to propose the mechanism of structure indication as a UG-external force regulating parsing efficiency.

As long as an utterance is directed to the hearer, he is forced to interpret that

utterance in the way the speaker intends. Naturally, the system of grammar is assumed to be equipped with some mechanism whereby the hearer can recognize the syntactic structure generated by the speaker. Because the hearer receives only the linearized string of a syntactic structure, he may, in some cases, be at a loss to interpret the expression in question unless such a mechanism is available in the system. This reasoning entails that any surfaced expression can involve a structure indicator for detecting the syntactic structure created by the speaker. We thus need to identify a mechanism of structure indication in each language, which, obviously, belongs to UG-external factors since the deductive system UG simply enables us to yield syntactic structures (see section 1).⁹

Now, let us take the sentence-final particle *ka* in Japanese as an instance to consider how structure indication is implemented in the course of actual language use. It is widely assumed in generative grammar that *ka* is a direct phonological realization of Q (see e.g. Nishigauchi (1990), Cheng (1997)). For instance:

- (7) Sono hon, kaimasita ka?
 that book buy.Pol.Past Q
 ‘Did you buy the book?’

In (7), which is a yes/no-question, *ka* is a direct phonological reflection of Q, so it is often called a question particle (or a question marker). We suppose, meanwhile, that Q is a more abstract entity that has no direct phonological realization; its occurrence simply makes a clause interrogative syntactically (see section 2.1). To put it simply, Q and *ka* are never identical.

It is important to note that *ka* can also appear in a sentence having no connection with the illocutionary force of question:

- (8) Nani-o tabe yoo ka.
 what-Acc eat will SFP
 ‘What do I eat?’

⁹ When facing a certain puzzling problem assumed to include what we regard here as UG-external factors, generativists sometimes make recourse to the “inflation” of functional categories. To put it differently, generativists make an attempt to find the solution of such a problem by bringing UG-external factors to syntax, a clearly unwelcome result for generative (minimalist) frameworks because they seek for the simplest system for explanation. Although adding functional categories might lead to the best solution, the more superfluous functional categories a system is equipped with, the less explanatory it is (see Narita (2011) for related discussion; cf. Fukui and Sakai (2003), who discuss how they should be by presenting the “visibility guideline for functional categories”). Therefore, we must carefully distinguish between linguistic phenomena triggered by UG-internal forces and those triggered by UG-external forces.

Suppose that (8) is uttered in a monologue with a non-rising intonation. In this case, the speaker is merely thinking about what he will eat, and thus does not intend to ask someone to specify the value of the *wh*-phrase. As is clear from this example, the claim is too strong that *ka* is a question particle, though this particle can be no doubt associated with the interrogative interpretation in some way. In fact, Ikarashi (2014) proposes, based on an example of this sort, that *ka* serves as an illocutionary force indicator of question; it indirectly contributes to the interrogative interpretation by semantically indicating what Searle (1969) calls the preparatory condition. As Searle (1969:66) argues, the illocutionary act of question presupposes, as a preparatory condition, that “S[peaker] does not know ‘the answer,’ i.e., does not know if the proposition is true, or, in the case of the propositional function, does not know the information needed to complete the proposition truly.” Assuming that *ka* shows the speaker’s uncertainty (cf. Moriyama (1989a), Hirose (1995), Takiura (2008)), its use linguistically guarantees this preparatory condition. In other words, the occurrence of *ka* gets the hearer to infer that the expression is a question.

It is fruitful that we reinterpret Ikarashi’s proposal in terms of the mechanism of structure indication; that is, *ka*, a speaker’s uncertainty marker, can be exploited to indicate the syntactic occurrence of Q because Q is phonologically empty to the extent that the hearer cannot detect it directly. To understand the role that *ka* plays as a structure indicator, let us compare interrogative sentences in the spoken and the written registers. In the spoken register, the use of *ka* is not obligatory in questions because the interrogativity of questions is always ensured by a rising intonation; the intonation enables the hearer to detect the syntactic occurrence of Q without retaining the services of *ka*. Thus, in (7), the omission of *ka* does not give the sentence an unacceptable status (i.e., *Sono hon, kai masita?*, with a rising intonation). By contrast, the omission of *ka* in the written register leads to a completely opposite result. When writing, say, a letter, we normally use *ka* in questions; its omission renders the sentence unnatural:¹⁰

- (9) Tanaka-san,
 Tanaka-Mr.
 ‘Dear Mr. Tanaka’
 #Taichoo-wa ikaga desu. Okusama-kara kaze-o hiita
 health-Top how Cop.Pol Wife-from cold-Acc caught

¹⁰ The interrogative sentence in (9) becomes more natural if the period is replaced with the question marker, which plays a similar role to raising intonation; more specifically, it signals to the reader that the sentence in question has Q in its structure and thus the illocutionary force of question.

to kiki...

Comp hear

‘How is your health? I heard from your wife that you had caught a cold...’

(cf. Taichoo-wa ikaga desu ka.)

The unnaturalness of this sentence can be attributed to the absence of what indicates Q. In the written register, unlike in the spoken one, rising intonation is not available as guaranteeing the syntactic occurrence of Q; the use of *ka* is the only way to instruct the reader to notice that the phonologically empty Q exists in its abstract structure. Therefore, the intended interrogative sentence sounds unnatural. The observation here strongly shows that aspects of a particular system derived UG-internally are motivated partially by the mechanism of structure indication, a UG-external force.

In this subsection, we showed, based on Newmeyer’s (1998) idea that aspects of an autonomous system can be motivated functionally, that the mechanism of structure indication functions as a UG-external force regulating parsing efficiency; this mechanism plays a highly significant role in the course of speech production and comprehension by reminding the hearer what syntactic structure the speaker has assembled prior to his utterance.

3. The *Nani-o X-o* Construction as a Rhetorical Yes/No-Question

In the previous section, we proposed both internal and external systems that constitute a complementary theory of form and function. Taking this proposal into account, we will argue in this section that the *nani-o X-o* construction is virtually a rhetorical yes/no-question, in which invisible rhetorical *wh*-movement as a purely syntactic scope determination operation is followed by overt *wh*-phrase realization under the mechanism of structure indication (see section 3.1); the proposed analysis is attested by several compelling pieces of evidence (see sections 3.2 and 3.3).

3.1. *The Interplay between Internal and External Systems: Invisible Rhetorical Wh-Movement and Overt Wh-Phrase Realization*

To uncover the *nani-o X-o* construction as a rhetorical yes/no-question, again, let us begin by observing the sentence in (1), repeated here as (10).

- (10) Nani-o bakagetakoto-o yuu nda?
 what-Acc rubbish-Acc say Nominal.Cop
 ‘Why do you talk rubbish? (You shouldn’t say that thing.)’

We saw in section 1 that this construction expresses the illocutionary force of accusation exclusively: in (10), the speaker is blaming the hearer for talking rubbish. We also observed that the construction has the *wh*-phrase *nani-o* characteristically. These facts remind us of the existence of a rhetorical question of the sort discussed by S&I (2014), which also bears the illocutionary force of accusation (here and below, we ignore the normal question interpretation as irrelevant to the discussion):

- (11) Kimi-wa nani-o tabe-teiru nda? (= (2))
 you-Top what-Acc eat-Prog Nominal.Cop
 ‘What are you eating? (You shouldn’t eat it.)’

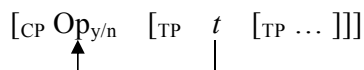
Importantly, the accusative-marked *wh*-phrase in (11) corresponds to the object of the verb; that is, the *wh*-phrase is a constitutive part of the proposition in question. Such a rhetorical *wh*-phrase (i.e. a *wh*-phrase in the rhetorical question) can also appear as an adjunct, as illustrated in the following example:

- (12) Itu-made ne-teiru nda?
 when-until sleep-Prog Nominal.Cop
 ‘How long are you going to sleep? (Wake up.)’

Here, the speaker is accusing the hearer by touching on the temporal aspect. The *wh*-phrase *itu-made* is added to the proposition *ne-teiru*, expansively specifying the propositional content.

Meanwhile, the accusative-marked *wh*-phrase in (10), unlike a rhetorical *wh*-phrase of the sort used in (11) and (12), is assumed not to be a constitutive part of the proposition in question; it is impossible to regard it as an argument of the verb or as an adjunct contributing to the expansion of the propositional content. It is highly unlikely, therefore, that the sentence in (10) is divided into the class of rhetorical questions identical to (11) and (12). Rather, we would like to hypothesize that this sentence is a rhetorical version of the yes/no-question but not of the *wh*-question. We will accordingly refer to (11) and (12) as rhetorical *wh*-questions and (10) (i.e. the *nani-o* X-*o* construction) as a rhetorical yes/no-question, whose structure is as follows:

- (13) The rhetorical yes/no-question in Japanese:



Recall here that in normal *wh*-question formation, Q determines the scope of a *wh*-phrase via WH-Q binding after fixing the clause type as [+Q]; in rhetorical *wh*-question formation, the same strategy is unavailable, because of the lack of Q in the domain of C, which specifies the clause type as [-Q]. Since there is no element in the latter case that can fix the scope of the *wh*-phrase, it is forced to move overtly to its scope-taking position (i.e. Spec-C), a movement operation termed rhetorical *wh*-movement (see section 2.1.1). With this analysis in mind, consider the structure of a rhetorical yes/no-question depicted in (13), in which the yes/no-operator is base-generated within the TP-adjoined position (see section 2.1.2). This structure has no Q, so the yes/no-operator cannot implement scope determination through WH-Q binding; thus, it has to be raised from its original position to Spec-C by rhetorical *wh*-movement.¹¹

An important question arises here: why must the *wh*-phrase *nani-o* exist in the *nani-o X-o* construction as a rhetorical yes/no-question? Since the (rhetorical) yes/no-operator is invisible, so is the movement (i.e. rhetorical *wh*-movement). The invisibility poses no problem for the syntactic computation because the invisible operator still determines its scope via rhetorical *wh*-movement. Thus, the deductive system UG, with its internal system working well, has nothing to say about the question above. Rather, the answer results straightforwardly from the mechanism of structure indication (see section 2.2), which motivates a particular system from outside:

- (14) a. [_{CP} Op_{y/n} [_{TP} *t* [_{TP} Bakagetakoto-o yuu nda]]] (UG-internal)
 ↑
 b. [_{CP} Nani-o [_{TP} *t* [_{TP} bakagetakoto-o yuu nda]]] (UG-external)

As illustrated, the movement of the (invisible) yes/no-operator (i.e. (14a)) is

¹¹ One might argue against the claim that movement of a yes/no-operator ensures rhetorical interpretation with normal yes/no-questions interpreted rhetorically. For instance:

- (i) Hanako-ni hidoikoto-o itta no?
 Hanako-Dat something bad-Acc said Nominal
 ‘Did you say something bad to Hanako?’

With sentence (i), the speaker can accuse the hearer of having said something bad to Hanako. We can say, however, that the rhetorical interpretation in (i) is a secondary, not primary, function of yes/no-questions. For one thing, the sentence has a rising intonation, which, according to Moriyma (1989b), functions to elicit a response from the hearer. This fact of intonation shows that the sentence itself is structurally a normal yes/no-question (motivated by the syntactic occurrence of Q); thus, its relevant interpretation is guaranteed at least outside of the domain of syntax. Meanwhile, the *nani-o X-o* construction, as discussed in the text, has a syntactic source for its rhetorical interpretation. In sum, rhetorical interpretation can be produced either syntax-internally or syntax-externally.

followed by the realization of the *wh*-phrase *nani-o* (i.e. (14b)). Although the former takes place, as noted above, as a purely syntactic scope determination operation, the latter is from the mechanism of structure indication, which makes the existence of the syntactic structure with invisible rhetorical *wh*-movement noticeable for the hearer.

Note that the *nani-o X-o* construction is directed normally to the hearer for the purpose of accusing him of doing something. Naturally, the speaker needs to make the hearer recognize its rhetorical structure as much correctly as he creates it. Nevertheless, the construction is undetectable in appearance in that it involves invisible rhetorical *wh*-movement.¹² In fact, the *nani-o X-o* construction, or a rhetorical yes/no-question, becomes unacceptable if the *wh*-phrase is deficient, as given by Konno (2004:11):

- (15) a. Nani-o bakagetakoto-o yuu nda?
 b. *Bakagetakoto-o yuu nda?

(15b), where the *wh*-phrase is deleted from (15a), is indistinguishable in form from a declarative sentence; thus, the hearer cannot find (15b) a rhetorical yes/no-question the way it is. It is inevitable to render the existence of invisible rhetorical *wh*-movement detectable for the hearer. Therefore, the realization of the *wh*-phrase *nani-o* is obligatory under the mechanism of structure indication.

Crucially, invisible rhetorical *wh*-movement is indispensable syntactically in determining the clausal domain over which the yes/no-operator has an effect, while the realization of the *wh*-phrase is nothing but useless for the syntactic computation. Nonetheless, the *wh*-phrase indeed has to exist in the *nani-o X-o* construction, under the mechanism of structure indication. Not only does the current analysis successfully explain the compulsory existence of a *wh*-phrase in the *nani-o X-o* construction, but it also exemplifies two important aspects in human language (i.e. UG-internal and UG-external aspects of a particular system); that is, (invisible) rhetorical *wh*-movement is triggered by the UG-internal factor and the subsequent realization of the *wh*-phrase by the UG-external factor. Therefore, the *nani-o X-o* construction turns out to be a complex linguistic phenomenon produced by the interplay between both factors, a significant result at which we would not be able to arrive without considering aspects of actual language use (see also section 1).

In the following subsections, we will present supporting evidence for (i)

¹² It should be also noted that the intonation of this construction is unsuitable for structure indication since it has a non-rising intonation rather than a rising intonation (see section 2.1.1), which is why the mechanism of structure indication appeals only to the realization of the *wh*-phrase.

invisible rhetorical *wh*-movement for scope determination and for (ii) overt *wh*-phrase realization for structure indication, respectively.¹³

3.2. *Invisible Rhetorical Wh-Movement for Scope Determination*

Given that a rhetorical *wh*-question (cf. (11)), as discussed by S&I (2014), raises the entire *wh*-phrase to Spec-C in an overt fashion (see also section 2.1.1), it is natural to consider that the same mechanism applies to the *nani-o X-o* construction as a rhetorical yes/no-question; in other words, the *wh*-phrase in a rhetorical yes/no-question moves to Spec-C at narrow syntax, which we will demonstrate in this subsection.

First of all, the *nani-o X-o* construction shows irreversibility between two accusative-marked elements. Observe the following example from Konno (2004:5):

- (16) *Bakagetakoto-o nani-o yuu nda?
 rubbish-Acc what-Acc say Nominal.Cop
 ‘Why do you talk rubbish?’

As described in (16), if the accusative-marked *wh*-phrase and the accusative-marked object of a transitive verb are reversed, it degrades acceptability.

Injection of a topicalized subject, on the other hand, has no harmful repercussions on acceptability, as illustrated in Konno (2004:7):

- (17) (Omae-wa) nani-o (Omae-wa) bakagetakoto-o it-teiru nda?
 you-Top what-Acc rubbish-Acc say-Prog Nominal.Cop
 ‘Why do you talking rubbish? (You shouldn’t say that thing.)’

As indicated in (17), even if a topicalized subject interposes in the *nani-o X-o* construction, it does not affect acceptability, maintaining the illocutionary force of accusation with this construction.

Our interpretation of these observations is as follows: the accusative-marked *wh*-phrase cannot come after the accusative-marked object of a transitive verb for the reason that it is base-generated within the TP-adjoined position; in the meanwhile, the same material, moving as a whole to Spec-C in an overt fashion, is able to come before or after a topicalized subject NP, which in Japanese is often assumed to be base-generated in the highest structural domain (cf. Saito (1985)).

¹³ We will reckon overt *wh*-phrase realization precisely as overt “*wh*-expletive” realization within the “recycle” system stated in section 3.3.

This interpretation strongly supports the claim that the *wh*-phrase in a rhetorical yes/no-question moves to Spec-C at narrow syntax.

The next instance from S&I (2014:147) provides further confirmation for this claim:

- (18) a. Adjunct island:
 *Kimi-wa nani-o bakagetakoto-o yutta atode
 you-Top what-Acc rubbish-Acc said after
 warat-teiru nda?
 laugh-Prog Nominal.Cop
 ‘(Lit.) Are you laughing after you talked rubbish why?’
- b. Complex NP island:
 *Kimi-wa nani-o bakagetakoto-o yuu hito-o
 you-Top what-Acc rubbish-Acc say person
 mat-teiru nda?
 wait-Prog Nominal.Cop
 ‘(Lit.) Are you waiting for the person who talks rubbish why?’

As illustrated in these sentences, embedding the *nani-o X-o* construction within islands makes this construction unacceptable. Assuming that overt movement obeys Subjacency (cf. Huang (1982)), the unacceptability of the sentences in (18) means the Subjacency violation induced by rhetorical *wh*-movement. More specifically, in (18), narrow-syntactic movement of the accusative-marked *wh*-phrase targets the matrix Spec-C, so it crosses the adjunct island in (18a), and the Complex NP island in (18b), in an illicit way; consequently, the Subjacency violations emerge.

Moreover, an island-less environment allows for long-distance movement of a rhetorical yes/no-operator:

- (19) Nani-o bakagetakoto-o it-teiru to omot-teiru nda?
 what-Acc rubbish-Acc say-Prog Comp think-Prog Nominal.Cop
 ‘(Lit.) Do you think that you talk rubbish why?’
 “The speaker directs the hearer to think about what stupid things the hearer is saying.”

In (19), although the *nani-o X-o* construction is embedded deeply, the sentence has a rhetorical question interpretation where the speaker is reproaching the hearer for talking rubbish. The relevant structure is as follows:

- (20) [CP₂ (Omae-wa) [CP₁ Op_{y/n} (nani-o) [TP [VP [CP [TP *t* [TP bakagetakoto-o it-teiru]] to] omot-teiru]]] nda]
-

In (20), the (rhetorical) yes/no-operator originates within the embedded TP-adjoined position, the target of the accusation, and then it undergoes long-distance movement to the matrix Spec-C (here, we are disregarding the intermediate steps of this movement as irrelevant to the discussion). The intended reading obtains accordingly. Here again, the claim is endorsed that the *wh*-phrase in a rhetorical yes/no-question moves to Spec-C at narrow syntax.¹⁴

Next, our discussion proceeds to overt *wh*-phrase realization for structure indication, which we will confirm from the viewpoints of referential emptiness and default accusative licensing; in this process, we will argue that the *wh*-phrase *nani-o* is *recycled* as a nonreferential *wh*-expletive.

3.3. Overt Wh-Phrase Realization for Structure Indication

3.3.1. Referential Emptiness: Nani Recycled as a Wh-Expletive

Let us start with the discussion of referential emptiness, which explains why the rhetorical yes/no-operator to be invisible is crystallized as the *wh*-phrase *nani* but not as a different *wh*-phrase like *dare* ‘who,’ *doko* ‘where,’ and *itu* ‘when.’ If the realization of the rhetorical yes/no-operator is implemented for the purpose of structure indication, then the overt entity manifested (i.e. *nani*) is expected to behave as a less contentful formal place holder such as an expletive; if it has a specific meaning, the sentence in question would be interpreted as a rhetorical *wh*-question, in which the *wh*-phrase serves as a constitutive part of the proposition ((10) versus (11)-(12)). This expectation is borne out by an argument independently made by Maynard (2000), according to which “[*nani*] is the least specific among all

¹⁴ Konno (2004:6) discusses (i) as showing that the *nani-o* X-*o* construction resists subordination and thus serves as a main clause phenomenon:

- (i) * [Watasi-wa [kimi-ga nani-o bakagetakoto-o yuu no ka]
 I-Top you-Nom what-Acc rubbish-Acc say Nominal SFP
 wakara-nai].
 understand-Neg
 ‘I don’t understand why you talk rubbish.’

Our analysis, on the other hand, counts (i) as a *wh*-island case. In order for this sentence to receive a rhetorical interpretation, the *wh*-phrase has to undergo narrow-syntactic movement to the matrix Spec-C. However, this movement strategy is jeopardized by the intervention of Q in the embedded clause; the movement of the *wh*-phrase violates Subjacency. In the first place, Q, if any, has to determine the scope of its c-commanding operator via WH-Q binding. In such a case, the operator remains in situ and undergoes no overt realization; consequently, the relevant sentence cannot be interpreted as accusation.

wh-phrases,” so it can be used as nonreferential:

- (21) Na, nan da yo, kimi-wa
 wha... what Cop SFP you-Top
 ‘Wha... What the heck are you?’

(I. Momoi, *Majimeni! Danko Koosai*, cited from Maynard (2000:1218))

Here, *nan*, a phonological variant of *nani*, “is unidentifiable, and therefore unspeakable,” which means that “there is no reasonable way to answer this question” (Maynard (2000:1218)). In other words, *nan* is referentially empty and does not presuppose its value. On the other hand, if another *wh*-phrase like *dare* ‘who’ is used instead of *nan(i)* (e.g., *Da, dare da yo, kimi-wa* ‘Wh... Who are you?’), the sentence becomes a *wh*-question to which the hearer can answer like ‘I’m Yosuke.’ That is why *nani*, not other *wh*-phrases, is selected as a structure indicator for invisible rhetorical *wh*-movement. In fact, *wh*-phrases such as *dare* ‘who,’ *doko* ‘where,’ and *itu* ‘when’ are inconsistent with rhetorical yes/no-questions:

- (22) * {Dare/Doko/Itu}-o bakagetakoto-o yuu nda?
 {who/where/when}-Acc rubbish-Acc say Nominal.Cop
 ‘Why do you talk rubbish? (You shouldn’t say that thing.)’

Thus, this inconsistency supports the mechanism of structure indication proposed here.

It should be noted that the mechanism of structure indication is arguably connected with a “recycle” property. The element *nani* ‘what,’ in its basic usage, has a specific meaning to the extent of behaving as a constitutive part of the proposition in question. That element, on the other hand, can be exploited as a structure indicator, in a way such that only a certain salient property—the characteristic *operator*—is retained. In other words, the *nani* in this sense is a less contentful formal place holder recycled as a “*wh*-expletive.”¹⁵ If the *nani-o* X-*o* construction were derived exclusively by a system motivated UG-internally, then the recycle property would not need to emerge; the internal system has only to create a new counterpart to the *wh*-expletive here. In any case, the observations here take the side of the present analysis that adopts a complementary theory of form and

¹⁵ The term *wh-expletive* is often used, in a different generative context, as denoting a scope marker in the partial *wh*-movement construction, in which the *wh*-phrase occurs in a lower position than the one from which it takes scope and the *wh*-expletive occupies the latter position, i.e. the scope-taking position (cf. McDaniel (1989)). Although both entities sharing the same term *wh-expletive* are quite similar in that they are in scope-taking positions, we do not go into the details due to space limitations.

function.

3.3.2. *Default Accusative Licensing*

Let us turn to the discussion of default accusative licensing, which offers an elegant account of the reason why the *nani* as a *wh*-expletive is accusative-marked. There are two perspectives in the literature as to how the accusative-marked *wh*-phrase is Case-licensed: (i) structural Case (cf. Kurafuji (1996, 1997)) and (ii) inherent Case (cf. Ochi (1999), Nakao and Obata (2009)). Our analysis belongs to neither. Rather, we argue, based on Zhang (1991), that it is a default accusative case that the *wh*-phrase possesses. In English, for example, a default case is realized as accusative, as observed in what Adrian Akmajian calls Mad Magazine sentences (from Akmajian (1984:2)):

(23) What, me worry?

As Akmajian (1984:4) states, “since [Mad Magazine sentences] lack tense, the case of the subject will simply be the unmarked accusative form, rather than the marked nominative.” When the subject is marked with a nominative Case, such an expression is no longer regarded as a Mad Magazine sentence (e.g., *What! *She call me up?! Never.* (Akmajian (1984:3))). Based on the observation that such accusative-marked elements occupy ungoverned positions, Zhang (1991) proposes that they receive default accusative cases.

The accusative-marked *wh*-phrase in the *nani-o* X-*o* construction, unlike the accusative-marked object of a transitive verb, originates invisibly as a rhetorical yes/no-operator in the TP-adjoined position, which is outside *v*'s minimal search domain; thus, it cannot receive a structural Case. Also, the claim is adhoc that such a *wh*-phrase receives an inherent Case under some kind of functional projection, in the sense that it evokes a construction-specific treatment of the *nani-o* X-*o* construction. On the other hand, the analysis of default accusative licensing makes sense (from Nakao and Obata (2009:157)):

- (24) a. Kare-wa nani-o minna-ni izime-rare-teiru no?
 he-Top what-Acc everyone-Dat bully-Pass-Prog Nominal
 ‘Why is he bullied by everyone?’
- b. Kare-wa nani-o itumo okurete toochakusuru no?
 he-Top what-Acc always late arrive Nominal
 ‘Why does he always arrive late?’

Both sentences illustrate that the accusative-marked *wh*-phrase is capable of occurring with passive and unaccusative predicates, which in general have no ability to assign accusative Cases. This fact strongly suggests that an accusative case for that *wh*-phrase, set by default, does not hinge upon what the predicate type is. Consequently, our analysis falls into place by explaining both why the rhetorical yes/no-operator to be invisible is manifested compulsorily as the *wh*-phrase *nani* and why the *wh*-phrase manifested, i.e. the *nani* recycled as a *wh*-expletive, is accusative-marked.

All in all, we proposed in this section that the *nani-o* X-*o* construction, or a rhetorical yes/no-question, is produced by the interplay between UG-internal and UG-external factors: invisible rhetorical *wh*-movement serves as a purely syntactic scope determination operation; overt *wh*-phrase realization works as a mechanism of structure indication by which the hearer can detect the existence of the syntactic structure that the speaker has yielded prior to his utterance. This analysis succeeded in obtaining the whole picture of this construction as a result.

4. Conclusion

In this article, based on a series of works by Frederick J. Newmeyer, we identified both UG-internal and UG-external aspects of a particular system (i.e. Japanese): the mechanism of clausal typing and scope determination and the mechanism of structure indication. Structure indication, outside of the domain of the deductive system UG, characterizes variant aspects of particular systems. To put it another way, UG and structure indication forge particular systems hand in hand from the “top down” and from the “bottom up,” respectively. Although the research target was Japanese in this article, our ultimate goal is to reveal similarities and differences among a variety of languages under a complementary theory of this sort. Further, there is a possibility that variant aspects characterized by structure indication might be diachronic as well as synchronic, insofar as that mechanism is UG-external rather than UG-internal. In this way, our research project is expected to broaden in typological and historical directions.

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