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Negative Indeterminates and Phonological Phrasing: the Remaining Issues

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ABSTRACT. This paper concerns the Negation Sensitive Indeterminates (NSI) in Japanese, focusing on the remaining issues of Fujita (2018). This paper shows that the Dative NSI, which is a counterexample to Yamashita's analysis, can be explained in terms of the proposal offered by Fujita (2018). Besides, this paper provides an analysis for the NSI in the subject position. It is claimed that the phonological boundary between the subject and verb is removed due to the phonological constraint. These proposals enforce the discussion of Fujita (2018).

Keywords: indeterminate, negation, prosody, phonological phrase

1. Introduction

This paper concerns the remaining issues of Fujita (2018). In the paper, we offered an explanation for the *Negation Sensitive Indeterminate* (henceforth NSI) in the *split VP indeterminate construction* (VP SPIN construction). During the discussion, we provided the counterexamples to Yamashita's (2009) analysis. However, we did not offer any alternative analysis to the data. Also, in order to show that the Nominative subject lies in *v*P SPEC position, we mentioned the NSI in the subject position which receives the Nominative Case. Nonetheless, we did not give an account for the data, which are implicitly counterevidence to our analysis. This paper deals with these examples and shows that our analysis correctly captures these examples. The organization of this article is as follows. Section two reviews the proposal of Fujita (2018). Section three deals with the Dative NSI. Section four offers an analysis to the NSI in the subject position. Section five concludes the discussion.

2. Review of Fujita (2018)

Before the analysis, we would like to review the proposal of Fujita (2018) and confirm the syntactic structure of the VP SPIN construction. We defined the *split indeterminate* (SPIN) construction as a case where a scalar particle which is associated with an indeterminate is separated from the indeterminate. Look at the following example.

(1) Naoya-ga dare-o home-mo si-nakat-ta.
Naoya-NOM IND-ACC praise-SP do-NEG-PAST
'For any *x*, *x* a person, Naoya did not even praise *x*.'

In this example, the scalar particle *mo* ‘even/also,’ which is associated with the indeterminate *dare* ‘who,’ is attached not to the indeterminate itself but to the verb. As a result, the particle and the indeterminate are no longer adjacent to each other. In this case, the scalar particle is attached to the verb. Therefore, we called it the *VP SPIN construction*. Also, we discussed the difference between the NSI and universal indeterminate. We saw that they are not free variation in a technical sense. Although we cannot distinguish them segmentally, we can do it via prosody. The former has the lexical pitch accent H*L while the latter does not have the accent (LH).

In the VP SPIN construction, the NSI forms duration of the H-tone from the NSI to the scalar particle. We referred to it as the *H-tone Plateau*. The central proposal of Fujita (2018) was the following three points.

(2) a. The Nominative subject in Japanese lies in *v*P SPEC.
b. In the VP SPIN construction, the NSI must form the H-tone Plateau from the NSI to the scalar particle.
c. The left edge of the maximal projection of the phonological phrase (φ_{max}) blocks the H-tone Plateau.

The statement (2c) was illustrated schematically as (3)

(3) Blocking of H-tone Plateau

The contrast between (4a) and (4b) was explained in terms of the prosodic structure.

(4) a. Naoya-ga dare-o home-mo si-nakat-ta.
Naoya-NOM IND-ACC praise-SP do-NEG-PAST
‘For any *x*, *x* a person, Naoya did not even praise *x*.’
b. * Dare-ga Naoya-o home-mo si-nakat-ta.
IND-NOM Naoya-ACC praise-SP do-NEG-PAST
‘For any *x*, *x* a person, *x* did not even praise Naoya.’

The two examples have the following prosodic structures, respectively.[1]

[1] In these examples, *dare* ‘who’ and *mo* ‘even/also,’ which are marked with boldface, are the indeterminate and the scalar particle, respectively.

(5) a. (Naoya-ga)φ_{max} (**dare**-o home-**mo** si-nakat-ta)φ_{max}
b. (**Dare**-ga)φ_{max} (Naoya-o home-**mo** si-nakat-ta)φ_{max}

In (5a), the NSI is licensed because the H-tone Plateau that the NSI forms does not go across the maximal projection of the phonological phrase. In (5b), on the other hand, the left edge of the maximal projection of the phonological phrase blocks the H-tone Plateau, and therefore the NSI is not licensed.

So far, we have summarized the proposal and analysis of Fujita (2018). Let us move on to the assumption on the syntactic structure of the VP SPIN construction. In the VP SPIN construction, the scalar particle intervenes between the verb and the tense morpheme. Since the tense morpheme is a bound morpheme, it demands a stem. Therefore, the dummy verb *s*- 'do' is inserted immediately before the tense morpheme in the phonological component.[2] This means that there is no position for the dummy verb in syntax, implying no additional functional head for the VP SPIN construction. To be more precise, we assume the following syntactic structure for (4a).

(6) Syntactic Structure of the VP SPIN Construction

[TP [NEGP [*v*P Subj [VP Obj V] *v*-mo] -nak] -ta]

In Fujita (2018), we also proposed the phase-based mapping algorithm from the syntactic structure to the prosodic structure. The proposal is quite simple; the sister of the phase head forms the phonological phrase in the phonological component (cf. Dobashi 2003, Kratzer and Selkirk 2007, among others). Given this algorithm and the syntactic structure (6), we can obtain the prosodic structure (5).[3]

Based on these assumptions, now we would like to investigate the remaining issues. As we have pointed out at the beginning of this paper, we have not analyzed the data where we put forth as counterexamples to Yamashita's analysis. Besides, we have not yet discussed the NSI in the subject position. The examples below are the relevant data.

[2] To be precise, the negation head lies between the tense morpheme and the verb. However, since the negation head is also the bound morpheme, the dummy verb is still required.
[3] If the proposed algorithm is correct, we would expect that the verb and the tense morpheme with the dummy verb belong to the different phonological phrases. This analysis is plausible. In fact, we will analyze so in this paper. However, this phrasing does not affect the discussion of Fujita (2018), and therefore we simply ignored the phrase boundary in Fujita (2018) and examples in (5). What is crucial is not the phonological phrase itself, but the maximal projection of the phonological phrase.

(7) a. Taro-wa dare-ni omiyage-o age-mo si-nakat-ta. (Kishimoto 2001:600)
Taro-TOP IND-DAT souvenir-ACC give-SP do-NEG-PAST
'For any *x*, *x* a person, Taro did not even give *x* a souvenir.'
b. Taro-ga dare-ni amazake-o uri-mo si-nakat-ta.
Taro-NOM IND-DAT amazake-ACC sell-SP do-NEG-PAST
'For any *x*, *x* a person, Taro did not even sell *x amazake*.'

(8) a. koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93)
ever IND-NOM think-SP do-NEG-PAST idea
'the idea that no one has ever thought of'
b. Kusatta orenzi-o dare-ga kai-mo si-nakat-ta. (Yamashita 2009:352) [4]
rotten oranges-ACC IND-NOM buy-SP do-NEG-PAST
'For any *x*, *x* a person, *x* did not even buy rotten oranges.'

In (7), the NSI is the Dative argument of the predicate. Therefore, the NSI is not adjacent to the verb to which the scalar particle is attached. Yamashita (2009) proposes that the NSI is licensed in the VP SPIN construction if the NSI occupies the adjacent position to the verb. As Fujita (2018) pointed out, the sentences (7a) and (7b) are counterexamples to his analysis, because the NSI does not lie in the adjacent position to the verb.

The sentences (8a) and (8b) are examples where the NSI is the Nominative subject. If our analysis of the syntactic structure and the syntax-prosody mapping algorithm is correct, we would make an incorrect prediction; for, in our mapping algorithm, the VP becomes the (maximal projection of the) phonological phrase. Hence, we would expect that the NSI in the subject position is not licensed.

3. The Dative NSI

First, we would like to analyze the Dative NSI. The following sentences are the relevant examples.

(9) a. Taro-wa dare-ni omiyage-o age-mo si-nakat-ta. (Kishimoto 2001:600) [= (7a)]
b. Taro-ga dare-ni amazake-o uri-mo si-nakat-ta. [= (7b)]

[4] Yu Tanaka (personal communication) reports that this sentence sounds somewhat unnatural. We agree to his observation. The oddness improves when we replace the scrambled object in (8b) with unaccented words.

(i) Oishii amazake-o dare-ga kai-mo si-nakat-ta.
delicious amazake-ACC IND-NOM buy-SP-NEG-PAST
'For any *x*, *x* a person, *x* did not even buy delicious *amazake*.'

Therefore, this observation does not affect Fujita's (2018) argument.

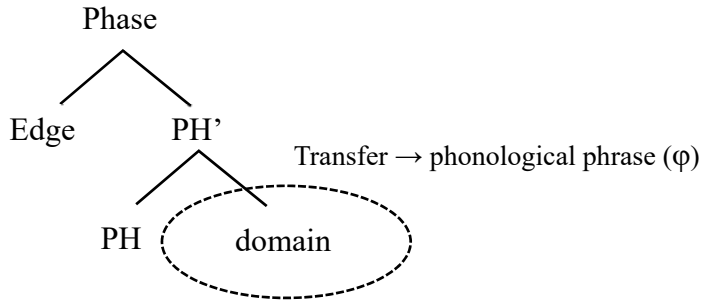
In these examples, the NSI lies in the Dative argument position. To analyze these sentences, we need the theory about how the Dative argument is phrased phonologically.

We do not assume an additional head to host and license the Dative argument. Therefore, we assume the following syntactic structure for the ditransitive construction.

(10) The Syntactic Structure of the Ditransitive Construction[5]
[TP [*v*P Subj [VP IO DO V] *v*] T]

In this analysis, the Dative argument lies in VP SPEC. Here, let us confirm our syntax-prosody mapping algorithm (11).

(11) Transfer Domain and Phonological Phrasing



Fujita (2018) proposed that the sister of the phase head becomes the phonological phrase in the phonological component. If this analysis is correct, we obtain the following prosodic structures for (9a) and (9b), respectively.

(12) a. (Taro-wa)φ (dare-ni omiyage-o age-mo si-nakat-ta)φ
b. (Taro-ga)φ (dare-ni amazake-o uri-mo si-nakat-ta)φ

Independently, Selkirk and Tateishi (1991), who adopt the Edge-based mapping algorithm, propose that the Dative argument itself becomes the phonological phrase. They assign the prosodic structure (14) to the example (13).

(13) a. Aoyama-ga Yamaguchi-ni aniyome-o yon-da. (Selkirk and Tateishi 1991:524)
Mr. Aoyama-NOM Yamaguchi-DAT sister-in-law call-PAST
'Mr. Aoyama called his sister-in-law to Yamaguchi.'
b. Syntactic Structure for (13a)
[S [NP Aoyama-ga] [VP [NP Yamaguchi-ni] [VP [NP aniyome-o] yon-da]]]

[5] Here, IO and DO stand for the indirect object and the direct object, respectively. The former receives the Dative Case marker, whereas the latter receives the Accusative Case marker.

(14) Prosodic Structure for (13a)
(Aoyama-ga)$_{Map}$ (Yamaguchi-ni)$_{Map}$ (aniyome-o yon-da)$_{Map}$ (ibid.:531)

They do not adopt the recursive application of the single category. Besides, they distinguish the Major Phrase (MaP) from the Minor Phrase (MiP). If we adopt Ito and Mester's (2012, 2013) recursive subcategory theory and Selkirk and Tateishi's (1991) Edge-based mapping algorithm, then we can obtain the following prosodic structure.

(15) (Aoyama-ga)φ ((Yamaguchi-ni)φ ((aniyome-o)φ yon-da)φ)φ

Since they propose that the left edge of the phonological phrase (i.e., Major Phrase) corresponds to the left edge of the maximal projection of the lexical categories, we predict (15) as a prosodic structure for the sentence (13).

Now, we have the two possible prosodic structures for the ditransitive clause, namely (16a) and (16b).

(16) a. (S)φ$_{max}$ (IO DO V)φ$_{max}$
b. (S)φ$_{max}$ ((IO)φ ((DO)φ V)φ)φ$_{max}$

Which mapping algorithm is correct is not the issue here. What is crucial here is that the indirect object (i.e., the Dative argument) is included within the maximal projection of the phonological phrase in which the verb is included. In other words, the Dative argument and the verb lie within the same maximal projection of the phonological phrase.

Given these considerations, we correctly predict that the Dative NSI is licensed because there is no left edge of the maximal projection of the phonological phrase between the NSI and the scalar particle. In fact, when (9a) and (9b) are pronounced, the H-tone Plateau lasts from the indeterminate to the scalar particle. Under the proposed analysis, the Dative NSI is naturally explained. Yamashita's (2009) theory cannot capture the Dative NSI. In this respect, our theory is superior to Yamashita's one.

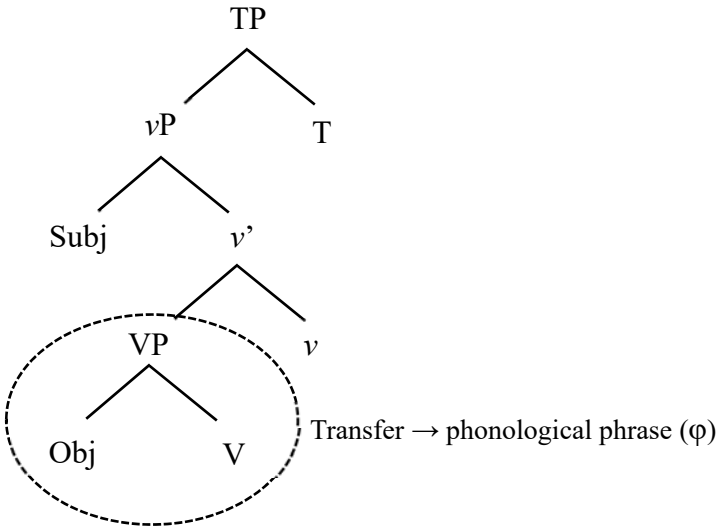
4. The NSI in the subject position

The next question is how to explain the NSI in the subject position. The followings are the relevant data.

(17) a. koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93) [= (8a)]
b. Kusatta orenzi-o dare-ga kai-mo si-nakat-ta. (Yamashita 2009:352) [= (8b)]

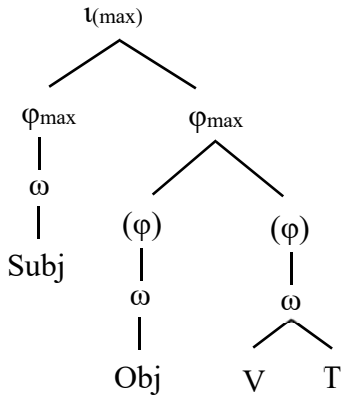
In Fujita (2018), we showed that the Nominative subject in Japanese lies in *v*P SPEC. In addition, we have proposed the mapping algorithm such that the sister of the phase head becomes the phonological phrase. The diagram (18) illustrates the current situation.

(18) The Transitive Structure of Japanese



Here, we assume that the *v* head in the transitive clause is the phase head. The problem is that the current theory predicts that the Nominative subject and the verb are in the different phonological phrases.

(19) The Prosodic Structure of the Transitive Clause[6]



We have two different approaches to this problem. One is derivational, and the other is representational. We do not have enough motivation to choose one from the other. Therefore,

[6] As we have seen in the footnote 2, the tense morpheme is the bound morpheme, and therefore, it must be attached to the verb via morphological merger. As a result, they behave as if they were a single prosodic word.

we would like to show the two ways. An idea behind the two analyses is the same. Hence, the two might be notational variants. The idea is that the phonological phrase consists of at least two phonological words (i.e., prosodic words).

First, we would like to investigate the relative clause example (17a), repeated here as (20). We do not advocate any specific syntactic analysis of the relative clause in Japanese.

(20) koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93) [= (8a)]

For any syntactic analysis of the relative clause in Japanese, it is true that, in (20), the object (i.e., the theme argument) is not phonetically realized within the relative clause. As a result, the transfer domain of *v*P in the relative clause has only one prosodic word, which is a phonologically undesirable situation. As we have just mentioned, we have two possible ways to overcome such an undesirable situation and to explain the NSI in the subject position. We first show the derivational explanation. After that, we show the representational approach.

The idea of the derivational approach is recruited from Dobashi (2003). In the derivational approach, we assume the phonological constraint below.

(21) (ωω)φ (Inkelas and Zec 1995:544)

This constraint requires that the phonological phrase should consist of at least two phonological words. If the phonological phrase does not fulfill this constraint, then restructuring takes place. Restructuring is a phonological operation that removes the phrase boundary. If it is applied, elements in distinct phonological phrases are grouped into a single phonological phrase.

(22) Restructuring: (ω)φ(ω)φ → (ωω)φ

Notice that the constraint (21) is a purely phonological constraint, and the operation takes place in the phonological component. Therefore, no syntactic information is available in restructuring. Besides, we assume, following Dobashi (2003), that restructuring concerns the directionality, and restructuring takes place leftward in Japanese. The following formulae illustrate this situation.

(23) a. (ωω)φ(ω)φ → (ωωω)φ
b. (ω)φ(ωω)φ → (ω)φ(ωω)φ

In both examples, (ω)φ violates the relevant constraint. However, in (23b), restructuring does not take place because there is no prosodic phrase into which the illegitimate phrase is joined on the left side of the phrase. On the other hand, in (23a), the illegitimate phrase is joined into

the left-adjacent phonological phrase. Consequently, the phonological phrase which contains three phonological words comes up.

We can apply this process to the relative clause. Let us see the relative clause example (20), repeated as (24), again.

(24) koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93) [= (8a)]

We can provide the following rough syntactic structure (25) to this sentence.

(25) Syntactic Structure of (24)

[TP koremade [*v*P dare-ga [VP (*t*) kangae] *v*-mo si]-nakat-ta] aidea

Here, (*t*) stands for the phonetically covert theme argument. Notice that this does not imply that the *operator movement* takes place. Therefore, we can replace it with *pro*. Whether it is the *trace* (i.e., copy) or *pro*, since it is not realized phonetically, it is immune to the computation in the phonological component.

We have proposed that the sister of the phase head is transferred, and it becomes the phonological phrase in the phonological component. In (25), the VP node is transferred first. At this stage, we obtain the following "potential" phonological phrase.[7]

(26) (kangae)φ

It is clear that the phrasing (26) violates the phonological constraint (21) because the phrase includes only one phonological word. However, since there is no left-adjacent phrase at this point, this "potential" phrase cannot undergo restructuring. At the next phase step, the sister of C head is transferred. At this stage, we gain the following phonological phrasing.

(27) (koremade dare-ga (kangae)φ -mo si-nakat-ta)φ

First, we need to consider the morpho-phonological status of the scalar particle *mo* 'even/also.' It is a bound morpheme and is attached to the preceding stem. In this case, it is attached to the verb via morphological merger. Therefore, we get the following phonological phrasing.

[7] Our mapping algorithm maps the sister of the phase head into the phonological phrase in the phonological component. In fact, it is so when the mapping algorithm creates no illegitimate phonological phrase. However, when it induces a trouble (i.e., makes the illegitimate phrase), the phrase is cannot be the phonological phrase. In this sense, the transferred domain is the "potential" phonological phrase.

(28) (koremade dare-ga (kangae-mo)φ si-nakat-ta)φ

Here, we assume that the left edge of the phonological phrase implies the phonological phrase boundary, and therefore, the corresponding right edge is introduced. In the same vein, the left edge is introduced immediately after the right edge. Hence, the following phonological phrasing is obtained.

(29) (koremade dare-ga)φ (kangae-mo)φ (si-nakat-ta)φ

Here, the second "potential" phonological phrase violates the constraint (21) because it includes only one phonological word. Hence, restructuring takes place at this point. As we mentioned above, the restructuring is leftward. Therefore, the prosodic structure (29) becomes (30).

(30) (koremade dare-ga kangae-mo)φ (si-nakat-ta)φ

Finally, the head noun is transferred, and it becomes the "potential" phonological phrase.

(31) (koremade dare-ga kangae-mo)φ (si-nakat-ta)φ (aidea)φ

Again, restructuring takes place, because the transferred head noun consists of a single phonological word. The phrasing (32) is a prosodic structure of the example (24).

(32) (koremade dare-ga kangae-mo)φ_{max} (si-nakat-ta aidea)φ_{max}

What is crucial here is that the phonological boundary between the subject and verb is removed. As a result, they belong to the same phonological phrase. Therefore, the H-tone Plateau between the indeterminate and the scalar particle is not blocked. Consequently, the NSI in the subject position in (24) is licensed.

The discussion above is the derivational approach. Now, we would like to offer the representational (or Optimality Theoretic) approach to the example. The relevant example is (24), repeated here as (33).

(33) koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93) [= (8a)]

In the representational approach, we assume the following markedness constraint.

(34) Minimal Binality (MINBIN): A prosodic constituent C dominates at least two Cs. (A prosodically binary constituent is better balanced than a simple one.) (Féry 2017:88)

In the current context, the relevant prosodic categories are the phonological phrase (φ) and the phonological word (ω). Thus, we can restate (34) as (35) for the current purpose.

(35) MINBIN(φ): A prosodic constituent φ dominates at least two ωs.

What is crucial in the representational approach is that the markedness constraint, which is purely phonological, outranks the syntax-prosody mapping constraint. Although we assume such mapping constraint that the transferred domain is coincident with the phonological phrase, we can assume another mapping constraint. Whatever you choose as a mapping constraint, it does not affect the argument. Therefore, we use MAP as a mapping constraint. The constraint MAP can be formulated as below.

(36) MAP: The phonological phrase is coincident with the transferred domain of narrow syntax.
Assign one violation for the boundary of the phonological phrase that is not identical with the boundary of the transferred domain.[8]

As we have just mentioned, we can alternate this constraint with the Edge alignment constraint like ALIGN (XP, L; φ, L) (Selkirk and Tateishi 1991, Selkirk 1995, 2000, Truckenbrodt 1995, 1999, 2007) or the MATCH constraint like MATCH (XP, φ) (Selkirk 2009, 2011, Ito and Mester 2012, 2013). Again, what is important is ranking between the mapping constraint and the prosodic markedness constraint. The following formula shows the relation between the prosodic markedness constraint and the mapping constraint.

(37) MINBIN(φ) >> MAP

Given the relevant example (33), there is at least five candidates of phonological phrasing, namely (38a)–(38d).

(38) a. (koremade)(dare-ga)(kangae-mo)(si-nakat-ta)(aidea)
b. (koremade dare-ga)(kangae-mo)(si-nakat-ta)(aidea)
c. (koremade dare-ga)(kangae-mo)(si-nakat-ta aidea)
d. (koremade dare-ga kangae-mo)(si-nakat-ta aidea)
e. (koremade dare-ga kangae-mo si-nakat-ta aidea)

[8] We might rephrase this constraint as a constraint of the Match theory: MATCH-TD-TO-φ. Here, TD stands for the transferred domain. The constraint MATCH-TD-TO-φ requires every transferred domain TD correspond to the phonological phrase φ. See Ito and Mester (2013:28) for a related formulation of the Match theory.

The following tableau shows how the correct candidate is selected.

(39) The Representational Approach to (33)[9]

TD: [ωω][ω][ωω][ω]	MINBIN(φ)	MAP
a: (ω)(ω)(ω)(ωω)(ω)	*!***	*
b: (ωω)(ω)(ωω)(ω)	*!*	
c: (ωω)(ω)(ωωω)	*!	*
☞ d: (ωωω)(ωωω)		**
e: (ωωωωωω)		***!

In this way, we can choose the correct phrasing in the representational approach. The reasoning after we obtain the correct phonological phrasing is the same as the derivational approach. Since there is no left edge of the maximal projection of the phonological phrase, the H-tone Plateau from the NSI to the scalar particle is not blocked. Consequently, the NSI is licensed.

We have seen two approaches to the NSI in the subject position in the relative clause. Both analyses predict that there is no phonological boundary between the subject and verb. This is due to a purely prosodic factor. That is, the phonological phrase has to contain at least two phonological words.

We can analyze the scrambling example (17b), repeated here as (40), in the same fashion. What is crucial is the prosodic consideration that the phonological phrase consists of at least two phonological words.

(40) Kusatta orenzi-o dare-ga kai-mo si-nakat-ta. (Yamashita 2009:352) [= (8b)]

Again, we see the derivational approach first. Subsequently, we see the representational approach. However, before the analysis, we would like to show the syntactic structure of the

[9] The representational approach cannot explain why we cannot permit the following phrasing.

(i) (koremade dare-ga)(kangae-mo si-nakat-ta aidea)

Of course, it is not difficult to stipulate an *ad hoc* constraint to distinguish (i) from the correct phrasing (38d). However, such a constraint does not reflect our intuition. Our idea is to prohibit the phonological phrase that has only one prosodic word. Perhaps, this problem is related to the *opacity problem*. Before the representation is evaluated globally, the same evaluation seems to be applied to the initial-three phonological words, which are derivationally transferred earlier. To avoid this problem, we need to assume some additional mechanism like *Sympathy* (McCarthy 1999, 2003, 2007). However, this is the problem not only to us but also to the analysis that adopts the Optimal Theory. This fact might suggest that the derivational approach is superior to the representational approach. However, to investigate the opacity problem goes beyond the scope of this paper. Therefore, we would like to put aside this problem.

clause-internal scrambling.

Ueyama (2003) and Hoji (2003) convincingly argue that a displaced element by clause-internal scrambling allows the bound variable anaphora reading (henceforth BVA reading).

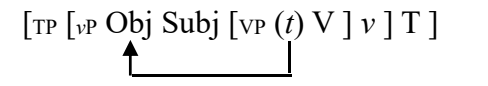
(41) Mettu-sae-ga sokono kantoku-o uttae-ta. (Hoji 2003: 393 (33a))
Mets-even-NOM its manager-ACC sue-PAST
'Even the Mets sued its manager.'

(42) a. *[Soko-o tekitaisisiteiru kaisya]-ga Toyota-sae-o uttae-ta. (Ueyama 2003:29 (16b))
[it-ACC be.hostile company]-NOM Toyota-even-ACC sue-PAST
'(Lit.) the company which is hostile to it sued even Toyota.'
b. Toyota-sae-o [soko-o tekitaisisiteiru kaisya]-ga uttae-ta. (Ueyama 2003:29 (16a))
Toyota-even-ACC [it-ACC be.hostile company]-NOM sue-PAST
'(Lit) The company which is hostile to it sued even Toyota.'

(42b) is derived from (42a) via clause-internal scrambling. In the canonical sentence order (i.e., (42a)), a quantificational object *Toyota-sae* 'even Toyota' cannot bind the pronoun *soko* 'that' in the subject position. However, once the quantificational object is scrambled into the sentence-initial position (i.e., (42b)), it can bind the pronoun. Compare this example to (41) where the quantificational expression *Mettu-sae* 'even Mets' lies in the subject position. The quantificational subject can bind the pronoun in the object position. What is crucial here is the fact that the clause-internal scrambling does not induce the *Weak Cross Over* effect. This fact implies that the scrambled object has the same structural property as the subject; namely, both the scrambled object and the subject bind the pronoun they c-command. Given this consideration, it is not unreasonable to assume that the scrambled object lies in the same syntactic position as the subject. As we have discussed, the (Nominative) subject lies in the *v*P SPEC position in Japanese. Therefore, it is plausible to assume that the scrambled object lies in *v*P SPEC, as well.[10]

If our reasoning is correct, we predict the following structure for the clause-internal scrambled sentence.

(43) The Syntactic Structure of the Clause-internal Scrambled Sentence



[10] One might argue that the scrambled object occupies TP SPEC or TP-adjoined position. However, if so, it does not affect the current discussion. In fact, if we assume the scrambled object lies in TP SPEC or TP-adjoined position, we will make the same prediction.

In this structure, the scrambled object, as well as the subject, lies in *v*P SPEC position. What is crucial here is that the scrambled object is no longer in the domain of the phase head *v*. Therefore, when Transfer is applied to the sister of *v*, the scrambled object remains in narrow syntax. When the sister of the C head is transferred, both the subject and the scramble object are transferred. This implies that the two belong to the same phonological phrase.

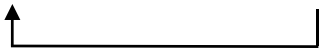
Given this assumption, the explanation by the derivational approach to the scrambled example is straightforward. Let us see relevant sentence (40), repeated here as (44), again.

(44) Kusatta orenzi-o dare-ga kai-mo si-nakat-ta. (Yamashita 2009:352) [= (8b)]

The example (44) has the following structure.

(45) Syntactic Structure of (44)

[TP [NEGP [*v*P Kusatta orenzi-o dare-ga [VP (*t*) kai] *v*-mo] -nak] -ta]



As we have seen in the case of the relative clause, we assume the following prosodic constraint (46), and if the phonological phrase does not satisfy the constraint, then restructuring takes place. We assume that restructuring is leftward as is shown in (47).

(46) (ωω)φ [= (21)]
(47) a. (ωω)φ(ω)φ → (ωωω)φ
b. (ω)φ(ωω)φ → (ω)φ(ωω)φ

First, the sister of *v* is transferred. In the case of scrambled example (44), the object is scrambled. Accordingly, what is left in the original position is *trace* (i.e., copy), and therefore it is invisible to the phonological component. Hence, what is transferred in this step is only the V head.

(48) (kai)φ

Notice that this "potential" phonological phrase does not fulfill the constraint (46). In the next step, the subject and the scrambled object is transferred.

(49) (kusatta orenzi-o dare-ga)φ (kai)φ (-mo si-nakat-ta)φ

As in the case of the relative clause, the scalar particle is morphologically merged to the verb because it is the bound morpheme. After the morphological merger, we obtain the following

structure.

(50) (kusatta orenzi-o dare-ga)φ (kai-mo)φ (si-nakat-ta)φ

Here, since the second phonological phrase does not satisfy the prosodic constraint (46), restructuring takes place. The operation is leftward, and therefore, the second phrase is joined with the left-adjacent phrase, which offers the structure below.

(51) (kusatta orenzi-o dare-ga kai-mo)φ (si-nakat-ta)φ

Again, the phonological boundary between the subject and verb is removed. As a result, the two belong to the same phonological phrase. Given this prosodic structure, there is no left edge of the maximal projection of the phonological phrase between the NSI and the scalar particle. Therefore, the H-tone Plateau can last through the scalar particle which is attached to the verb. Thus, the NSI in the subject position is licensed in (44).

We can offer essentially parallel explanation by the representational approach. Again, the representational approach assumes the (violable) constraints: BINMIN (φ) and MAP. We would like to review the two constraints.

(52) a. MINBIN(φ): A prosodic constituent φ dominates at least two ωs.
b. MAP: The phonological phrase is coincident with the transferred domain of narrow syntax. Assign one violation for the boundary of the phonological phrase that is not identical with the boundary of the transferred domain.

Here, remember that we argue that the former outranks the latter.

(53) MINBIN (φ) >> MAP [= (37)]

We have at least following four candidates of the phonological phrasing.

(54) a. (kusatta orenzi-o)(dare-ga)(kai-mo)(si-nakat-ta)
b. (kusatta orenzi-o dare-ga)(kai-mo)(si-nakat-ta)
c. (kusatta orenzi-o dare-ga kai-mo)(si-nakat-ta)
d. (kusatta orenzi-o dare-ga kai-mo si-nakat-ta)

The following tableau shows how the correct candidate is selected.

(55) The Representational Approach to (44)

TD: [ωωω][ω][ωω]	MINBIN(φ)	MAP
a: (ωω)(ω)(ω)(ωω)	*!*	*
b: (ωωω)(ω)(ωω)	*!	
☞ c: (ωωωω)(ωω)		*
d: (ωωωωωω)		**!

As the tableau shows, (54c) is the correct phrasing. The reasoning after we obtain the correct phrasing (54c) is the same as the derivational approach. There is no phonological phrase boundary between the NSI and the scalar particle which is associated with the verb, and hence, the H-tone Plateau is not blocked. Consequently, the NSI in the subject position is licensed.

In this fashion, we can provide a clear analysis for the examples (8a) and (8b), repeated here as (56a) and (56b).

(56) a. koremade dare-ga kangae-mo si-nakat-ta aidea (Kuroda 1965:93) [= (8a)]
b. Kusatta orenzi-o dare-ga kai-mo si-nakat-ta. (Yamashita 2009:352) [= (8b)]

In both the derivational approach and the representational approach, what is crucial is the prosodic constraint that the phonological phrase must consist of at least two phonological words. Assuming this phonological constraint makes an interesting prediction: if the sister of the phase head *v* (i.e., VP) contains only one prosodic word, the "potential" prosodic phrase is incorporated into the preceding phonological phrase. Consequently, the (Nominative) subject and the verb to which the scalar particle *mo* 'even/also' is attached are included in the same phonological phrase. As a result, the subject NSI is licensed in such an environment. In fact, this prediction is born out. Look at the following examples.

(57) a. Dare-ga home-mo si-nakat-ta no-wa Taro-da.
IND-NOM praise-SP do-NEG-PAST thing-TOP Taro-COP.PAST.
'It was Taro that no one even praise.'
b. Dare-ga home-mo si-nakat-ta yo, Taro-o.
IND-NOM praise do-NEG-PAST PART, Taro-ACC
'No one praised Taro.'

(57a) is an example of the cleft sentence. In this case, the theme argument (i.e., object) is a target of the cleft. (57b) is an example of the right-dislocation, where the object is dislocated. What is crucial is, again, the fact that VP consists of only one phonological word. These

examples have not been ever observed. Nonetheless, our theory precisely predicts that these examples are possible.

5.Conclusion

In this paper, we have seen two types of the example which are not explained in Fujita (2018). One case is the Dative NSI in the ditransitive construction, which is a counterexample to Yamashita's (2009) analysis. In this case, no left edge of the maximal projection of the phonological phrase lies between the Dative NSI and the scalar particle. Consequently, the Dative NSI is licensed. The other case is the subject NSI in the relative clause and scrambling. We have seen that the prosodic constraint which requires that the phonological phrase should contain at least two phonological words is decisive. Due to this constraint, the phonological boundary between the subject and verb is removed, and therefore the subject NSI is licensed. Besides, we have offered a new observation. That is, the cleft sentence and the right dislocation also allow the subject NSI, where our theory provides an adequate explanation.

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