Argument Ellipsis and Scope Economy

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Abstract

In this paper, I show that in Japanese, while some focus elements obligatorily take wide scope with respect to scope-bearing predicative heads, Argument Ellipsis reverses this scope possibility, leading to the obligatory narrow scope interpretation of focused elements. I further show that Scope Parallelism (Fox 2000) overrides the narrow scope requirement of elided arguments; when the antecedent clause exhibits scope interaction, the elided clause shows the parallel wide scope. I argue that such scope possibilities fall out from the interaction of the derivational PF-deletion analysis (Takahashi 2012, 2013a, b, 2017), the Morphological Merger of predicative heads (Shibata 2015), and Scope Economy and Parallelism (Fox 2000).

Keywords: Scope Economy, Parallelism, Argument Ellipsis, Morphological Merger, focus, quantifiers

1 Scope and Argument Ellipsis

It has been noted in the literature that some focus elements such as disjunctive elements and additive particle *mo* 'also' in Japanese obligatorily take wide scope with respect to negation or *(r)are* 'can' (Shoji 1986, Hasegawa 1994, Futagi 2004, Funakoshi 2011, 2012, 2013, Nomura 2005, Shibata 2015, among others). For instance, disjunctive elements in Japanese must have wide scope over negation, as

shown in (1a). That is, the example (1a) allows the interpretation that John doesn't speak Spanish OR he doesn't speak French, but it does not have the interpretation that John doesn't speak Spanish AND he doesn't speak French.

(1) a. John-wa [$_{DP}$ supeingo ka furansugo-o] hanas-ana-i.
John-TOP Spanish or French-ACC speak-NEG-PRES
'John doesn't speak Spanish or French.' (or » neg, *neg » or)
(Funakoshi 2013:13)

b. John doesn't speak Spanish or French. (or » neg, neg » or)

The lack of the narrow scope reading of the disjunctive element is surprising given that the English counterpart in (1b) allows both interpretations. The obligatory wide scope reading of the disjunction in (1a) becomes all the more surprising considering that Japanese has been regarded as a scope-rigid language, that is, a language which reflects relative scope between two quantifiers through their surface order (Kuroda 1970, Hoji 1985). For instance, (2a), where the subject c-commands the object, only allows the interpretation where the subject *dareka-ga* 'someone' takes scope over *subete-no hon-o* 'every book'.[1] Scope ambiguity obtains when the object is scrambled to the position c-commanding the subject, as shown in (2b).

(2) a. Dareka-ga (kono heya-no) subete-no hon-o yonda.
someone-NOM this room-GEN every-GEN book-ACC read
'Someone read every book in this room.' (some » every, *every » some)
(Kuroda 1970:136)

b. [(Kono heya-no) subete-no hon-o]$_i$ dareka-ga t_i yonda.
this room-GEN every-GEN book-ACC someone-NOM read
'Someone read every book in this room.' (some » every, every » some)
(Kuroda 1970:137)

Going back to (1a), where the object is externally-merged in a lower position than negation, it is expected under scope rigidity that the object should take narrow scope with respect to negation. However, this expectation is not borne out in (1a), where the object obligatorily takes wide scope vis-à-vis negation. One possible explanation for the unexpected wide scope reading of the disjunctive element is to assume string-vacuous movement, either as a covert movement like Quantifier Raising (QR) in English (Reinhart 1978, May 1977, 1985, Fox 2000) or an overt, string-vacuous scrambling of subjects and objects (Shibata 2015), the latter of which I adopt. Shibata (2015) proposes that agglutinative predicates in Japanese are derived by the Morphological Merger of predicative heads (Marantz 1984, Halle and Marantz 1993), and argues that structural adjacency is required for Morphological Merger. In order to ensure structural adjacency, elements within *v*P, such as the subject and the object, must undergo overt movement. Shibata argues that such obligatory overt extraction of arguments, in conjunction with the late insertion of a focus operator, leads to the obligatory wide scope interpretation of disjunction with respect to negation in (1a).

As opposed to (1a), Funakoshi (2011, 2012, 2013) observes that disjunctive elements that undergo Argument Ellipsis (AE) (Oku 1998, Saito 2007, Takahashi 2008a, b) only take narrow scope with respect to negation, as illustrated in (3).

(3) Mary-wa [$_{DP}$ supeingo ka furansugo-o] hanas-u ga,
Mary-TOP Spanish or French-ACC speak-PRES but
John-wa Δ hanas-ana-i.
John-TOP speak-NEG-PRES
'(Lit.) Mary speaks Spanish or French, but John doesn't speak.'
(*or » neg, neg » or) (Funakoshi 2013:13)

Given that movement may affect scope possibilities, as shown in (1a) and (2b), the obligatory narrow scope interpretation of disjunction is mysterious under the AE approach; if AE were available, there would be no reason to prohibit it from applying AE to a dislocated disjunctive element, erroneously yielding the wide scope reading of disjunction over negation. Funakoshi (2013) accounts for the obligatory narrow scope reading of disjunction in (3) by suggesting that the null element is not a full-fledged noun phrase, but a null pronoun *pro* (Kuroda 1965, Ohso 1976, Hoji 1985, Saito 1985), which induces an interpretation analogous to the narrow scope reading of disjunction.

On the other hand, Saito (to appear) puts forth an LF-copying approach to data like (3), by proposing that any syntactic object forming an Ā-chain cannot be copied onto one argument position; if the disjunctive element in (3) undergoes movement, it can take wide scope on a par with (1a). At the same time, however, the movement creates Ā-chain, rendering LF-copying onto the empty slot in the elliptical clause

impossible. This leads to the ban on movement in (3), which leads to the obligatory narrow scope interpretation of disjunction at the semantic interface.

Funakoshi's (2013) as well as Saito's (to appear) approaches, however, cannot account for data like (4), where the antecedent clause includes negation; in this case, a disjunctive element that undergoes AE exhibits the obligatory wide scope interpretation (Sakamoto 2016), unlike (3).

(4) a. John-wa [$_{DP}$ supeingo ka furansugo-o] hanas-anai.
John-TOP Spanish or French-ACC speak-NEG
'John doesn't speak Spanish or French.'

b. Bill-mo Δ hanas-ana-i.
Bill-also speak-NEG-PRES
'(Lit.) Bill also doesn't speak.' (or » neg, *neg » or) (Sakamoto 2016:8)

To summarize, the scope interaction of disjunctive elements and negation in Japanese raises the following empirical challenge.

(5) a. Why does an overt disjunctive element obligatorily take wide scope with respect to negation, as shown in (1)?

b. Why does a null disjunctive element obligatorily take narrow scope with respect to negation, as shown in (3)?

c. Why does the presence of negation in the antecedent clause lead to the obligatory wide scope interpretation of a null disjunctive element, as shown in (4)?

In this paper, I develop a new analysis which accounts for these apparently paradoxical observations in a uniform way. I argue that the scope possibilities are constrained by several independently motivated operations and restrictions at the interfaces, such as the derivational PF-deletion theory (Takahashi 2012, 2013a, b, 2017), Morphological Merger (Marantz 1984, Halle and Marantz 1993, Shibata 2015), and Scope Economy and Parallelism (Fox 2000, Takahashi 2008b). The paper is organized as follows. In section 2, I will critically review Shibata (2015), Funakoshi (2013) and Saito (to appear) in detail. I will show that these analyses provide a partial solution to some of the research questions in (5), but they fail to give a unified explanation for all of the scope properties summarized in (5). In section 3, I will argue for an alternative approach which is based on several independently motivated operations and restrictions, such as Morphological Merger, Scope Economy and Parallelism. I will show that the analysis accounts for other hitherto-unnoticed data regarding scope interactions observed with additive particles and complex predicates. In section 4, the analysis will be extended to quantifier scope and AE. Section 5 is the conclusion.

2. Previous Analyses

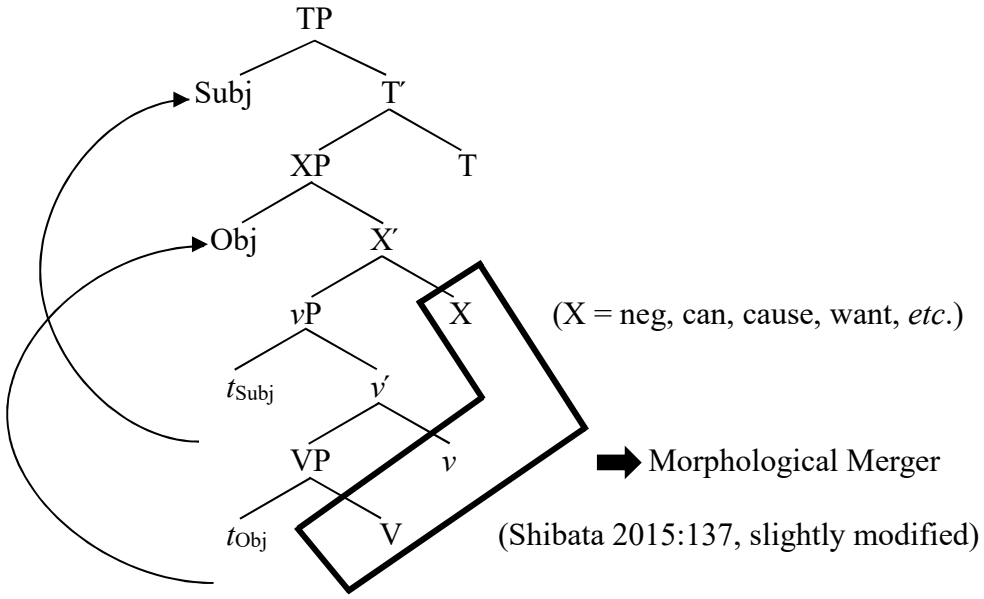
2.1 The Anti-Reconstruction Effect

This section focuses on the scope interaction between a disjunctive element and negation exemplified in (1a). Shibata (2015) calls the absence of disjunctive elements' narrow scope with respect to negation (and other scope-bearing predicative heads) the anti-reconstruction effect and deduces the effect from the combination of Morphological Merger and the obligatory late insertion of focus operators.

Employing the assumptions of the theory of Distributed Morphology (Halle

1990, Halle and Marantz 1993, Noyer 1997, Embick and Noyer 2001, among others), Shibata argues that agglutinative predicates in Japanese are derived by the Morphological Merger of predicative heads. Following the standard assumption that the version of Morphological Merger that creates a feature bundle for a legitimate Vocabulary Insertion must obey structural adjacency (Halle and Marantz 1993, Embick and Noyer 2001), Shibata proposes that the Morphological Merger of predicative heads in Japanese should also be operated before Vocabulary Insertion, which creates one gigantic compounding predicate word. Since the Morphological Merger of predicative heads obeys structural adjacency, the adjacency requirement of Morphological Merger is violated by the *v*P-internal elements such as subjects and objects. Hence, *v*P-internal elements obligatorily undergo syntactic movement out of *v*P in Japanese, as schematized in (6):

(6)



Shibata (2015) then argues that, when a focus element such as disjunction undergoes

movement, it is merged with its focus-operator acyclically. The acyclic merger of a focus operator is motivated by Fox's (2003) Trace Conversion. Trace Conversion consists of two syntactic operations in (7). Variable insertion converts lower copies into structures that contain variables. Determiner replacement converts a copy to a definite description, which refers back to the chain-head.

(7) a. Variable Insertion: (Det) Pred → (Det) [Pred λy (y = him_n)]

b. Determiner Replacement: (Det) Pred → the [Pred λy (y = him_n)]

(Where n is the index of the moved quantificational NP) (Fox 2003:111)

Note here that determiner replacement affects determiners, and hence DP-external operators remain unaffected by Trace Conversion. Shibata (2015) argues that this is the case with disjunctive elements, adopting Chierchia, Fox and Spector's (2012) proposal that a disjunctive element is interpreted with a DP-external silent exhaustive operator O_{ALT}. Hence, if an exhaustive operator, a kind of focus operator, were present before the movement of a focus element from [Spec, *v*P] to [Spec, TP], we would obtain the copy of the operator at the base as well as at the derived positions. This would, in turn, map the syntactic derivation of (8a) onto the LF representation roughly schematized in (8b). However, this representation is semantically uninterpretable because there are two identical operators in different positions.

(8) a. John or Tom will come.

b. [O_{ALT} (John or Tom) [will [O_{ALT} (John or Tom) come]]]

Shibata argues that such an ill-formed LF representation can be evaded only if the operator in question is obligatorily acyclically adjoined to the DP after the movement of the DP, as shown in (9).

(9) [O_{ALT} (John or Tom) [will [(John or Tom) come]]]

Keeping the late merger of focus operator in mind, let us review Shibata's explanation for (1a). First of all, the disjunctive element undergoes obligatory extraction in order to satisfy structural adjacency for the purpose of Morphological Merger. This obligatory movement of the disjunctive element in turn leads to the obligatory acyclic merger of a focus operator O_{ALT}, given that O_{ALT} is a DP-external operator and is not subject to Trace Conversion. Under the reasonable assumption that scope properties are encoded by focus operators, the acyclic merger of a focus operator to a moved element induces the obligatory wide scope reading of the focused element vis-à-vis negation, as illustrated in (1a).

2.2 The Scope-Trapping Effect of Argument Ellipsis

Indeed, Shibata's theory works beautifully with the obligatory wide scope reading of an overt disjunctive element, as illustrated in (1a), but his analysis may be problematic in face of the scope properties of the null counterpart of the disjunctive element; as opposed to (1a), which shows the obligatory *wide* scope interpretation of the disjunctive element with respect to negation, the example (3), repeated as (10), shows that the disjunctive element takes obligatory *narrow* scope with respect to negation when it undergoes AE (Funakoshi 2011, 2012, 2013).

(10) Mary-wa [$_{DP}$ supeingo ka furansugo-o] hanas-u ga, (=3)
Mary-TOP Spanish or French-ACC speak-PRES but
John-wa Δ hanas-ana-i.
John-TOP speak-NEG-PRES
'(Lit.) Mary speaks Spanish or French, but John doesn't speak.'
(*or » neg, neg » or) (Funakoshi 2013:13)

Funakoshi (2013) argues that the obligatory narrow scope reading of disjunction under ellipsis does not straightforwardly fall out from the AE approach, given that AE is an ellipsis operation and in principle there would be no reason to ban the application of AE to a dislocated disjunctive element, which, in turn, would erroneously yield the wide scope reading of disjunction over negation. Funakoshi (2013) proposes an alternative analysis where the "apparent" obligatory narrow scope reading of the disjunctive element in (10) is attributed to the existence of *pro* within the VP and the application of Verb-stranding VP Ellipsis (VVPE) (Otani and Whitman (1991), Funakoshi (2012)). Under this *pro*+VVPE analysis, the null argument in (10) is in fact *pro*, as shown in (11b). The *pro* is a null counterpart of overt pronoun *sorera-o* 'them' in (11c).

(11) a. Mary-wa [$_{DP}$ supeingo ka furansugo-o] hanas-u ga,
Mary-TOP Spanish or French-ACC speak-PRES but
'Although Mary speaks Spanish or French,'

b. John-wa *pro* hanas-ana-i.
John-TOP speak-NEG-PRES
'(Lit.) John doesn't speak.' (*or » neg, neg » or)

c. John-wa sorera-o hanas-ana-i.
John-TOP them-ACC speak-NEG-PRES
'John doesn't speak them.'

Funakoshi suggests that the anaphoric interpretation of pronouns in (11b) and (11c), whereby the sentences are interpreted as John doesn't speak them, is equivalent to the narrow scope interpretation of disjunction with respect to negation, that is, John speaks neither of them. The equivalence in interpretation between *pro* and the narrow interpretation of disjunction with respect to negation leads to the "apparently" narrow scope interpretation of disjunction in (10).

Although the *pro*+VVPE analysis certainly works for (10), it cannot account for the so-called quantificational reading of disjunctive elements. Takahashi (2008a, b) shows that *pro* cannot yield the quantificational interpretation that null, full-fledged quantificational noun phrases may yield. Consider (12), where the quantificational object *taitei-no sensei-o* 'most teachers' in (12a) is intended to be the antecedent of either the null object in (12b) or the overt pronoun in (12c).

(12) a. Hanako-ga taitei-no sensei-o sonkeisiteiru.
Hanako-NOM most-GEN teacher-ACC respect
'Hanako respects most teachers.'

b. Taroo-mo Δ sonkeisiteiru.
Taro-also respect
'(Lit.) Taro respects, too.'

c. Taroo-mo karera-o sonkeisiteiru.
Taro-also them-ACC respect
'Taro respects them, too.' (Takahashi 2008b:310)

Here, Takahashi (2008b) points out an interesting difference in interpretation between (12b) and (12c); (12c) only means that Taro respects those teachers that Hanako respects. That is, the pronoun in (12c) functions as what is called an E-type pronoun (Evans 1980). While (12b) seems to have this E-type reading, it can also have the quantificational interpretation that Taro respects most teachers, where the set of teachers that Taro respects can be different from the set of teachers that Hanako respects. If null objects were always *pro*, it would be expected that (12b) should only have the E-type reading on a par with (12c). Takahashi argues that the presence of the quantificational reading indicates that there is a full-fledged quantificational noun phrase in (12b), which is elided by the operation AE. The quantificational reading, therefore, serves as a diagnostic test for ellipsis, including AE.

Keeping this observation in mind, let us consider (13). The null object in (13b) is intended to take the quantificational element in (13a), *mittu izyoo-no yooroppa-no gengo* 'more than three European languages', as its antecedent.

(13) a. Ken-wa mittu izyoo-no yooroppa-no gengo ka
Ken-TOP three more.than-GEN Europe-GEN language or
itutu izyoo-no azia-no gengo-o hanas-e-ru.
five more.than-GEN Asia-GEN language-ACC speak-CAN-PRES
'Ken can speak more than three European languages or more than 5 Asian languages.'

b. Mari-wa Δ hanas-e-nai.
Mari-TOP speak-CAN-PRES
'(Lit.) Mari cannot speak.'

It is important to note that (13b) is ambiguous, allowing either the E-type pronoun reading that Mari can speak none of those languages, or the quantificational interpretation that Mari cannot speak more than three European languages or more than five Asian languages (but she can speak two European languages and three Asian languages). If the null disjunctive element were uniformly *pro*, as suggested by Funakoshi (2013), we would wrongly expect no quantificational reading in (13b). The availability of this quantificational reading indicates that the null disjunctive argument may be derived from AE. This, in turn, leads to a conclusion that we cannot attribute the narrow scope interpretation of disjunction in (10) to *pro*, and we are forced to seek for another way to explain the data.

Saito (to appear) accounts for the obligatory narrow scope reading of a disjunctive element under AE by proposing that AE cannot apply to Ā-moved elements. Saito assumes that an element that creates an Ā-chain is interpreted as an operator and as a variable at two different places. Specifically, Saito assumes with

Funakoshi (2013) that disjunction creates an operator-variable chain in the antecedent clause as roughly schematized in (14b).

(14) a. Mary-wa [$_{DP}$ supeingo ka furansugo-o] hanas-u ga, (syntax)
Mary-TOP Spanish or French-ACC speak-PRES but

b. [O_{ALT} (x, y) [Mary speaks (x, y)]] (LF)

c. John-wa *e* hanas-ana-i. (syntax)
John-TOP speak-NEG-PRES

d. *John-wa *O_{ALT} (x, y)* hanas-ana-i. (operator-copying)

e. *John-wa *(x, y)* hanas-ana-i. (variable-copying)

'(Lit.) Mary speaks Spanish or French, but John doesn't speak.'

(*or » neg, neg » or)

Then, in order to derive the legitimate interpretation for the null object construction in (14c), we need to copy the disjunctive element in the antecedent clause in (14a) onto the elliptic site in (14c). Since two occurrences of Ā-chain cannot be copied into a single argument position, the possible LF-copying options are restricted to the copying of the operator alone, as in (14d), or the variable alone, as in (14e). Saito argues that neither of them yields a legitimate interpretation; (14d) is illegitimate because it include a free variable and (14e) is disallowed because there is no variable the operator can bind. That is, an operator-variable chain is needed for a legitimate LF representation. Hence, the only option allowed in (14a) is not to move the disjunctive element, but interpret it in-situ, which yields the obligatory narrow scope reading of disjunction with respect to negation. Saito's (to appear) analysis, however, faces

theoretical complications under close scrutiny. In order for his analysis to be on the right track, one might want to prohibit the derivational scenario where Ā-movement occurs in the antecedent clause *after* the copying of the antecedent onto the empty slot in the elliptical clause, as well as the derivation where the copied element in the elliptical clause undergoes Ā-movement at LF *after* it is copied (see Oku 2016 for the related discussion). In addition, Saito's (to appear) analysis, as well as Funakoshi's (2013) analysis, is faced with a certain empirical weakness, to which I turn in the next section.

2.3 Argument Ellipsis with Scope Interaction in the Antecedent Clause

Saito's (to appear) as well as Funakoshi's (2013) analyses face a critical empirical challenge in (15). More concretely, when the antecedent clause includes negation and exhibits scope interaction, a disjunctive element that undergoes AE actually exhibits obligatory wide scope, on a par with the parallel wide scope interpretation of the disjunctive element within the antecedent clause (Sakamoto 2016).

(15) a. John-wa [$_{DP}$ supeingo ka furansugo-o] hanas-anai.
John-TOP Spanish or French-ACC speak-NEG
'John doesn't speak Spanish or French.'

b. Bill-mo Δ hanas-ana-i.
Bill-also speak-NEG-PRES
'(Lit.) Bill also doesn't speak.' (or » neg, *neg » or) (Sakamoto 2016:8)

Since the *pro*-based analysis or the LF-copying analysis only expects the narrow scope

interpretation of disjunction to be possible, neither analysis can account for the wide scope reading of disjunction that undergoes AE.

To sum, in this section, I have reviewed the analyses of Shibata 2015, Funakoshi 2013, and Saito, to appear. Indeed, each analysis accounts for one or the other of the questions regarding scope possibilities between disjunction and negation as well as their interaction with AE, which is summarized in (5). However, their proposals are unable to solve the remaining questions. In short, none of the three analyses presents a unified, satisfactory explanation of all the scope properties illustrated by the afore-mentioned data. In the next section, I submit an alternative analysis that accounts for the questions in (5) in a consistent way. I propose that the apparent paradoxical scope properties summarized in (5) are derived from independently motivated operations at the interfaces, including the derivational PF-deletion approach of Takahashi (2012, 2013a, b, 2017), Morphological Merger (Shibata 2015), and Scope Economy and Parallelism (Fox 2000, Takahashi 2008b).

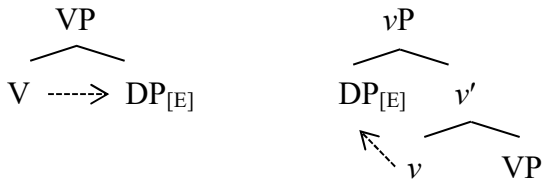
3 The Morphological Merger Analysis and Scope Economy

In this section, I lay out theoretical assumptions I adopt and show how these assumptions interact so that the complex scope possibilities of focus elements and scope-bearing predicative heads are explained in a uniform fashion. For the first question raised in (5), that is, the question of why an overt disjunctive element obligatorily takes wide scope with respect to negation, I follow Shibata's (2015) argument reviewed in section 2.1. Shibata (2015) proposes that arguments must undergo overt movement out of *v*P so that Morphological Merger may apply to create the required complex predicate under the condition of structural adjacency. He further

suggests that a focus operator must be acyclically adjoined at a derived position. Overt movement motivated by Morphological Merger and the obligatory late insertion of a focus operator are thus responsible for the obligatory wide scope reading of overt disjunctive element with respect to negation, as shown in (1a).

Let us now consider the mechanism which induces the obligatory narrow scope interpretation of a null disjunctive element vis-à-vis negation, as illustrated in (3). First, I adopt Takahashi's (2012, 2013a, b, 2017) derivational PF deletion analysis of AE, where an element that undergoes AE is marked for deletion with the [E] feature (Merchant 2001, Aelbrecht 2010) in the course of syntactic derivation and deleted at PF. Specifically, following Takahashi (2017), I assume an element that undergoes AE is marked for deletion when it is merged with its theta-role assigner in the syntactic derivation; the object is marked as [E] when merged with V, and the subject is marked as [E] when merged with *v*, as shown in (16a) and (16b), respectively:

(16) a. Object AE b. Subject AE



I also assume with Shibata (2015) that arguments must undergo overt movement out of *v*P so that Morphological Merger may apply to create the required complex predicate under the condition of structural adjacency. I argue that the Morphological Merger analysis, combined with the derivational PF-deletion approach, yields the important consequence that AE makes the object invisible for the purpose of the application of

Morphological Merger; Shibata (2015) argues that, if the *v*P-internal elements undergo overt movement out of *v*P, they do not interfere with the Morphological Merger of predicative heads. From a somewhat different point of view, this supposition states that copies of movement, which stay within the predicate but nonetheless are not pronounced, do not cause trouble for Morphological Merger. I maintain that the same obliteration effect is observed with [E]-marked arguments in the case of AE in Japanese; [E]-marked elements, like copies of movement, are not pronounced and hence do not count as an interference factor for Morphological Merger at the syntax-phonology interface. Suppose now that an object that is to be deleted at PF is [E]-marked when it is merged with its theta-role assigner V. Since this [E]-marking occurs at the very early point in the overt syntax, the [E]-marked element, even if it stays in situ, does not inhibit the Morphological Merger of predicative heads, which occurs post-syntactically. I argue that the invisibility of [E]-marked arguments creates the optionality of movements of such arguments, allowing the narrow scope interpretation of the disjunctive element in (3). However, it is important to note here that the obliteration effect by [E]-marking only allows the disjunctive element to stay in situ, which leads to the narrow scope reading of disjunction with regard to negation, but [E]-marking does not prohibit the disjunctive element from moving, which would lead to the *obligatory* narrow scope interpretation of the disjunctive element, as actually attested in (3). I propose that the obligatory narrow scope interpretation of disjunction in (3), as well as the obligatory wide scope attested in (4), is the manifestation of constraints at the syntax-semantics interface, that is, Scope Economy and Parallelism (Fox 2000).

Before accounting for the Japanese data, let me outline Fox's (2000) definitions

of Scope Economy and Parallelism with the VP-deletion data in English. Fox proposes that syntactic derivation is constrained by an economy principle, which prohibits movements that do not yield a new interpretation at the interface. According to the economy principle, when movement is covert and does not contribute to a new output for the phonological interface, the movement should yield a new interpretation for the semantic interface. Fox argues that covert operations such as QR obey this economy condition, prohibiting scopally vacuous QR. This point is stated in (17).

(17) Scope Economy

> Covert optional operations (i.e., Quantifier Raising and Quantifier Lowering) cannot be scopally vacuous (i.e., they must reverse the relative scope of two noncommutative quantificational expressions). (Fox 2000:75)

Fox assumes that scope vacuity is dependent on whether QR/QL reverses the relative scope of two quantificational expressions. If QR/QL does not change scope possibilities, the sentence is regarded as scopally uninformative. According to Fox, Scope Economy disallows the vacuous application of QR/QL on the scopally uninformative sentences, which has no effect on semantics. In other words, Scope Economy restricts a scopally uninformative sentence to surface scope with no scope-shifting operations like QR/QL.

Fox (2000) proposes another restriction on scope possibilities; that is, ellipsis must obey the Parallelism condition (see also Takahashi (2008b)), as stated in (18). Parallelism ensures that in ellipsis environments two sentences will have isomorphic syntactic representations at LF. Specifically, Parallelism dictates that the antecedent

and the elided clauses have the parallel scope under ellipsis.

(18) Parallelism

In an ellipsis/phonological reduction construction the scopal relationship among the elements in β_A must be identical to the scopal relationship among the parallel elements in β_E. (Fox 2000:32)

The combination of Scope Economy and Parallelism yields an interesting prediction regarding scope possibilities between two sentences S and S′. Scope Economy licenses inverse scope if S is scopally informative, that is, if S is semantically distinct under surface and inverse scope. In such a case, Parallelism allows for inverse scope in S′. On the other hand, if S is scopally uninformative, that is, S is semantically equivalent under surface and inverse scope, then Scope Economy does not allow inverse scope in S. In such a case, it follows from Parallelism that inverse scope is not allowed in S′. Given that Parallelism is a condition under ellipsis, S and S′ can be restated as the antecedent clause and the elliptical clause, and vice versa. Hence, the restrictions mentioned above, combined together, give rise to the Ellipsis Scope Generalization in (19), which states that scope-shifting operations such as QR are allowed only when the antecedent clause and the elided clause are both scopally informative.

(19) The Ellipsis Scope Generalization

In constructions that involve phonological reduction or deletion, inverse scope is possible only if it is semantically distinct from surface scope both in the sentence that includes the phonologically reduced/elided VP and in the sentence that includes the antecedent VP. (Fox 2000:83)

Let us now illustrate the Ellipsis Scope Generalization with VP-deletion examples in English. Consider (20):

(20) a. Some boy admires every teacher. Some girl does, too.

(some » every, every » some) (Fox 2000:4)

b. Some boy admires every teacher. Mary does, too.

(some » every, *every » some) (ibid.)

c. A girl talked to Jane, and a boy did, to every teacher.

(a » every, *every » a) (Fox 2000:83)

(20a), where both the antecedent clause and the elliptical clause are scopally informative, allows scope ambiguity induced by QR. Note that the sentences are subject to Parallelism, yielding the parallel scope possibilities between the antecedent clause and the elliptical clause; when *some boy* takes wide scope over *every teacher* in the antecedent clause, *some girl* also takes wide scope over *every teacher* within the elided VP in the elliptical clause. When the antecedent clause exhibits inverse scope where *every teacher* takes wide scope over *some girl*, the elided clause should also bear the same inverse scope. The scope ambiguity disappears, however, when the

elliptical clause is scopally uninformative, as shown in (20b). This is because QR cannot operate on the elliptical clause due to Scope Economy, leading to the obligatory surface scope. In addition, Parallelism requires that the antecedent clause exhibits the parallel surface scope interpretation. The same surface-scope effect is observed when the antecedent clause is scopally uninformative, as shown in (20c).

Following Takahashi (2008b), I argue that Scope Economy and Parallelism are effective with AE in Japanese as well. Remember that [E]-marking for arguments that undergo AE makes them invisible for the purpose of the Morphological Merger of predicative heads, allowing the elements to stay in situ. Under this analysis, the movement of null disjunctive elements in (3) and (4) are purely optional, and more importantly, they do not contribute to a new output for the phonological interface, given their phonologically null status. Hence, the movement of null elements in such cases must have a new interpretive outcome at the semantic interface. In addition, since AE is a kind of ellipsis operation, AE in Japanese obeys Parallelism in addition to Scope Economy. To illustrate this point, let us consider the schematic structures for (3) and (4), shown in (21a) and (21b), respectively:

(21) a. antecedent [[A or B] V] (*scopally uninformative*) (=3)
ellipsis [[Δ] V-NEG] (*or » neg, neg » or)
b. antecedent [[A or B] V-NEG] (*scopally informative*) (=4)
ellipsis [[Δ] V-NEG] (or » neg, *neg » or)

In (21a), the antecedent clause is scopally uninformative. In this case, Scope Economy restricts the interpretation of the antecedent clause to surface scope. At the same time,

Parallelism states that the elided sentence exhibit the same scope as the antecedent clause. This explains the obligatory narrow scope reading of disjunction in the elliptical clause. In contrast, the antecedent clause in (21b) is scopally informative; the disjunctive element must take wide scope over negation. I assume with Shibata (2015) that the interpretation is induced by the obligatory extraction of the object out of *v*P for the purpose of Morphological Merger and the obligatory late insertion of a focus operator. In addition, the elliptical clause also has the potential for inverse scope, including a disjunctive element and negation. Given that both the antecedent clause and the elliptical clause are scopally informative, Scope Economy does not force surface, narrow scope reading of disjunction. It follows under Parallelism that the elliptical clause yields the parallel wide scope reading of disjunction.[2]

To summarize the observation and proposals so far, the overt disjunctive element must take scope over negation due to the Morphological Merger of predicative heads and the acyclic merger of focus operators. AE of a disjunctive element makes it invisible for the application of Morphological Merger. In such cases, Scope Economy and Parallelism are at work; the disjunctive element must take narrow scope with respect to negation when the antecedent clause is scopally uninformative. In contrast, the disjunctive element must take wide scope when the antecedent clause is scopally informative, and shows obligatory wide scope interpretation of disjunction. The following subsections show that the proposal is extended to other scope interactions in Japanese.

3.1 *mo* 'also'

Hasegawa (1994) shows that *mo* 'also' obligatorily takes wide scope over negation

(see also Shibata 2015 and Saito and Takita 2016). For instance, (22) allows the interpretation that it is also to Taro that Hanako didn't send a New Year's card (also » neg), but it does not have the interpretation that it is not the case that Hanako sent a New Year's card to Taro as well (*neg » also). The same wide scope is observed in (23).

(22) Hanako-wa Taroo-ni-mo nengazyoo-o okura-nakat-ta.
Hanako-TOP Taro-DAT-also New.Year's card-ACC send-NEG-PAST
'Hanako also didn't send a New Year's card to Taro.'
(also » neg, *neg » also) (Saito and Takita 2016:422)

(23) Yuki-wa Ken-to-mo asob-anakat-ta.
Yuki-TOP Ken-with-also play-NEG-PAST
'Yuki also didn't play with Ken.' (also » neg, *neg » also)

According to Shibata (2015), the obligatory wide scope interpretation of XP-*mo* is accounted for in terms of the obligatory extraction of XP-*mo* from within the *v*P region for the purpose of Morphological Merger and the acyclic merger of a focus operator to the additive phrase. This assumption leads us to expect that null arguments are invisible for Morphological Merger and can stay in situ, which leads to the narrow scope reading of the additive phrase with respect to negation. As the example (24) shows, the expectation is borne out; when an argument with the additive particle *–mo* 'also' undergoes AE, the elliptical sentence with a scopally uninformative antecedent shows obligatory narrow scope vis-à-vis negation.

(24) a. Yuki-wa Ken-to-mo asonda. (*scopally uninformative*)
Yuki-TOP Ken-with-also played
'Yuki also played with Ken.'
b. Mari-wa Δ asob-anakat-ta.
Mari-TOP play-NEG-PAST
'(Lit.) Mari didn't play.' (*also » neg, neg » also)

This is accounted for in terms of Scope Economy and Parallelism; from Scope Economy it follows that the scopally uninformative antecedent clause in (24a), which only contains additive particle *-mo*, is restricted to surface scope. From Parallelism it follows that the elliptical clause in (24b) show the same surface, narrow scope reading of the additive phrase, prohibiting the inverse scope with respect to negation.

On the other hand, the example (25) shows that the elliptical sentence shows obligatory wide scope if the antecedent clause contains negation in addition to the additive phrase.

(25) a. Yuki-wa Ken-to-mo asob-anakat-ta. (*scopally informative*)
Yuki-TOP Ken-with-also play-NEG-PAST
'Yuki also didn't play with Ken.'
b. Mari-mo Δ asob-anakat-ta.
Mari-also play-NEG-PAST
'(Lit.) Mari didn't play.' (also » neg, *neg » also)

Since the antecedent clause as well as the elided clause are scopally informative in

(25), Scope Economy does not block a scope-shifting movement. In addition, the antecedent clause in (25a) shows obligatory wide scope interpretation of the additive phrase on a par with (22) and (23). From Parallelism it follows that the elided clause should exhibit the same wide scope interpretation of the additive phrase, forcing movement of the null additive phrase in (25b).

3.2 Complex Predicates

It has been observed that the object of a complex predicate obligatorily takes wide scope with respect to a scope-bearing element within the predicate in Japanese (Saito and Hoshi 1999, Hoshi 1999, Saito 2000, Bobaljik and Wurmbrand 2005, 2007, Shimamura and Wurmbrand 2014). Consider (26). Here, we follow Bobaljik and Wurmbrand (2005, 2007) in assuming that *wasure-* 'forget' is a kind of negation.

(26) Takasi-wa subete-no heya-no denki-o kesi-wasure-ta.
Takashi-TOP every-GEN room-GEN light-ACC turn.off-forget-PAST
'Takashi forgot to turn off all the lights.' (all » neg, ??neg » all)

Bobaljik and Wurmbrand (2005, 2007) argue that the obligatory wide scope reading of the object is derived from the obligatory movement of the object to a higher position c-commanding the scope-bearing element within the complex predicate.[3]

Now, let us apply AE to *subeteno-heya-no denki* 'all the room's light' in a configuration like (26). (27) includes the scopally uninformative antecedent clause, while (28) includes the scopally informative antecedent clause.[4]

(27) a. Yuki-wa subete-no heya-no denki-o kesita.
Yuki-TOP every-GEN room-GEN light-ACC turned.off
'Yuki turn off all the lights.' (*scopally uninformative*)

b. Takasi-wa Δ kesi-wasure-ta.
Takashi-TOP turn.off-forget-PAST
'(Lit.) Takashi forgot to turn off.' (all » neg, neg » all)

(28) a. Yuki-wa subete-no heya-no denki-o kesi-wasure-ta.
Yuki-TOP every-GEN room-GEN light-ACC turn.off-forget-PAST
'Yuki forgot to turn off all the lights.' (*scopally informative*)

b. Takasi-mo Δ kesi-wasure-ta.
Takashi-also turn.off-forget-PAST
'(Lit.) Takashi also forgot to turn off.' (all » neg, *neg » all)

In (27b), AE yields narrow scope that is not observed in its non-elliptical counterpart in (26). This is because the antecedent clause is scopally uninformative and Scope Economy does not allow the alleged scope-shifting operation, the movement of the object, in (27a). In addition, Parallelism requires that the syntactic representation of the antecedent clause and the elliptical clause be the same, thereby blocking the movement of the null object in (27b). On the other hand, in (28), where both the antecedent clause and the elliptical clause are scopally informative, Scope Economy allows scope-shifting operations in these sentences. In this case, the antecedent clause in (28a) shows the obligatory wide scope reading of *all* due to the obligatory extraction of the object for the purpose of Morphological Merger. In this case, Parallelism ensures, in fact forces, the parallel wide scope interpretation of *all* in the

elided clause (28b).

So far, we have observed that AE may allow the narrow scope interpretation of focus/quantificational elements that is not observed in its non-elliptical counterpart. I have argued that the scope possibilities are restricted by Scope Economy and Parallelism. In section 4, we review Takahashi's (2008b) proposal that Scope Economy and Parallelism are operative in sentences where two quantifiers show scope interaction under scrambling. I also show that the argument is extended to scope interactions induced by A-movement in Japanese.

4 Quantifier Scope: Scrambling and Pseudoraising

It has been acknowledged that Japanese is a scope-rigid language, which reflects relative scope of two quantifiers through their surface order, but scrambling induces scope ambiguity (Kuroda 1970, Hoji 1985), as reviewed in section 1 with the example (2), repeated here as (29). (29a) only allows the interpretation where the subject *dareka-ga* 'someone' takes scope over *subete-no hon-o* 'every book'. As shown in (29b), scope ambiguity obtains when the object is scrambled to the position c-commanding the subject.

(29) a. Dareka-ga (kono heya-no) subete-no hon-o yonda.
someone-NOM this room-GEN every-GEN book-ACC read
'Someone read every book in this room.' (some » every, *every » some)
(Kuroda 1970:136)

b. [(Kono heya-no) subete-no hon-o]$_i$ dareka-ga t_i yonda.
this room-GEN every-GEN book-ACC someone-NOM read
'Someone read every book in this room.' (some » every, every » some)
(Kuroda 1970:137)

Takahashi (2008b) observes that the effect of scope ambiguity under scrambling is also observed with the null quantificational object which undergo AE. Consider (30):

(30) a. [Taitei-no sensei-o]$_i$ zyosi-no dareka-ga t_i sonkeisiteiru.
most-GEN teacher-ACC girl-GEN someone-NOM respect
'(Lit.) Most teachers, some girl respects.' (*scopally informative*)

b. Dansi-no dareka-mo Δ sonkeisiteiru.
boy-GEN someone-also respect
'(Lit.) Some boy respects, too' (some » most, most » some)
(Takahashi 2008b:312)

(30a) is a scrambled sentence where two quantifiers, the quantificational subject *zyosi-no dareka-ga* 'some girl' and the quantificational object *taitei-no sensei-o* 'most teachers', show scope ambiguity. (30b) is an AE sentence where the null object is intended to take the quantificational object *taitei-no sensei-o* 'most teachers' in (30a)

as its antecedent. Takahashi observes that in (30), the elliptical clause with the elided quantificational object shows scope ambiguity in a way that obeys Parallelism of Fox (2000); from Parallelism it follows that, when the antecedent clause (30a) has the surface, base word-order scope where 'some girl' takes scope over 'most teachers', the elided clause (30b) may only have the surface scope as well. In the same vein, when the antecedent clause (30a) exhibits the inverse scope where 'most teachers' takes scope over 'some girl', the elliptical clause (30b) should exhibit the inverse scope as well.

Note here that both sentences in (30) contain two quantifiers and are scopally informative. In these sentences, Scope Economy as Fox (2000) defines it does not block scope-shifting operations. Under this reasoning, it is expected that, if one of the sentences contains only one quantifier and becomes scopally uninformative, the sentences are disambiguated in favor of the surface scope. Takahashi observes that the expectation is borne out, as shown in (31); while (31a) itself is potentially ambiguous on a par with (30a), it is disambiguated when followed by (31b):

(31) a. [Taitei-no sensei-o]$_i$ zyosi-no dareka-ga t_i sonkeisiteiru.
most-GEN teacher-ACC girl-GEN someone-NOM respect
'(Lit.) Most teachers, some girl respects.' (some » most, *most » some)

b. Taroo-mo Δ sonkeisiteiru.
Taro-also respect
'(Lit.) Taro respects, too.' (*scopally uninformative*) (Takahashi 2008:314)

Takahashi (2008b) argues that the disambiguation effect is due to Scope Economy and

Parallelism. In (31b), the object that undergoes AE takes the quantificational phrase *taitei-no sensei-o* 'most teachers' as its antecedent, but the subject *Taroo-mo* is non-quantificational. Hence, the movement of the elided quantificational object in (31b) does not change the scope interpretation. Scope Economy prohibits such semantically as well as phonologically vacuous movement. From Parallelism the antecedent clause also cannot have the LF representation with scope-shifting movement, which would yield the inverse scope. Therefore, the interaction of Scope Economy and Parallelism ensures the obligatory surface scope in (31). It is important to note that the antecedent clause, which is scopally uninformative, also disambiguates the elliptical clause.

(32) a. [Taitei-no sensei-o]$_i$ Taroo-ga t_i sonkeisiteiru.
most-GEN teacher-ACC Taro-NOM respect
'(Lit.) Most teachers, Taro respects.' (*scopally uninformative*)

b. Zyosi-no dareka-mo Δ sonkeisiteiru.
girl-GEN someone-also respect
'(Lit.) Some girl respects, too.' (some » most, *most » some)

The antecedent clause contains only one quantificational phrase. In this case, the overt scrambling of the quantificational object does not contribute to a new output for the semantic interface, and hence the sentence should be regarded as scopally uninformative. The elliptical clause, on the other hand, contains two quantifiers: the quantificational subject *zyosi-no dareka-mo* 'some girl' and the elided quantificational object that is intended to take *taitei-no sensei-o* 'most teachers' as its antecedent.

Although the elliptical clause (32b) alone may induce scope ambiguity, Parallelism forces the surface scope in conformity with the scopally uninformative antecedent in (32a). Importantly, scrambling in the antecedent clause yields a new output for the phonological interface, but nonetheless plays no role in licensing the movement of the elided object in the elliptical clause. From this it might follow that Scope Economy and Parallelism focus on the semantic interface, ignoring phonologically-meaningful but semantically-vacuous movements, at least in Japanese.[5]

Scope ambiguity also obtains with what Takahashi and Uchibori (2003) call *Pseudoraising* in Japanese. They observe that *omoe* 'seem', the Japanese counterpart of the English raising verb *seem*, may involve the overt A-raising of the embedded subject to the matrix clause, as shown in (33b):

(33) a. Huziko-ni(-wa) [$_{CP}$ Yawara-ga kin-medaru-o toru to] omoeta.
Fujiko-DAT-TOP Yawara-NOM gold-medal-ACC win C seemed
'It seemed to Fujiko that Yawara would win a gold medal.'

b. Yawara-ga$_i$ Huziko-ni(-wa) [$_{CP}$ t_i kin-medaru-o toru to] omoeta.
Yawara-NOM Fujiko-DAT-TOP gold-medal-ACC win C seemed
'(Lit.) Yawara seemed to Fujiko that would win a gold medal.'

(Takahashi and Uchibori 2003:301-302)

Now, let us consider a pseudoraising construction that contains a quantificational embedded subject and a quantificational matrix experiencer. As (34) shows, when the embedded quantificational subject undergoes movement to the matrix clause, scope ambiguity results. The ambiguity in (34) reflects the fact that A-movement in

Japanese may yield inverse scope, as attested in A-scrambling out of a control clause (Nemoto 1993, Uchibori 2000).

(34) Taitei-no kyoozyu-ga$_i$ zyosi-gakusei-no dareka-ni-wa t_i
most-GEN professor-NOM female-student-GEN someone-DAT-TOP
nooberusyoo-o toru to omoeta.
Nobel.Prize-ACC win C seemed
'(Lit.) Most professors seemed to some female student to win the Nobel Prize.'
(most » some, some » most)

Next, consider the cases where the raising quantificational subject undergoes AE. First, (35) is a case where two quantifiers exist both in the antecedent clause and in the elliptical clause, the latter of which includes the elided object that takes the quantificational raising subject *taitei-no kyoozyu-ga* 'most professors' as its antecedent. Hence, these clauses are both regarded as scopally informative.

(35) a. Taitei-no kyoozyu-ga$_i$ zyosi-gakusei-no dareka-ni-wa t_i
most-GEN professor-NOM female-student-GEN someone-DAT-TOP
nooberusyoo-o toru to omoeta.
Nobel.Prize-ACC win C seemed
'(Lit.) Most professors seemed to some female student to win the Nobel Prize.' (*scopally informative*)

b. Dansi-gakusei-no dareka-ni-mo Δ nooberusyoo-o
male-student-GEN someone-DAT-TOP Nobel.Prize-ACC
toru to omoeta.
win C seemed
'(Lit.) Seemed to some male student to win the Nobel Prize.'
(most » some, some » most)

In this case, Scope Economy licenses scope-shifting operations, allowing inverse scope both in the antecedent clause and the elliptical clause. However, it is important to note that Parallelism narrows down the scope possibilities to the parallel scope between the antecedent clause and the elliptical clause: when 'some female student' takes scope over 'most professors' in the antecedent clause, 'some male student' must take scope over 'most professors' in the elliptical clause as well, and vice versa.

As is expected by Scope Economy and Parallelism, when the antecedent clause is scopally uninformative as shown in (36), the ambiguity disappears.

(36) a. Taitei-no kyoozyu-ga$_i$ Yuta-ni-wa t_i nooberusyoo-o
most-GEN professor-NOM Yuta-DAT-TOP Nobel.Prize-ACC
toru to omoeta.
win C seemed
'(Lit.) Most professors seemed to Yuta to win the Nobel Prize.'
(*scopally uninformative*)

b. Dansi-gakusei-no dareka-ni-mo Δ nooberusyoo-o
male-student-GEN someone-DAT-TOP Nobel.Prize-ACC
toru to omoeta.
win C seemed
'(Lit.) Seemed to some male student to win the Nobel Prize.'
(*most » some, some » most)

(36a) involves the overt A-movement of the embedded subject – *taitei-no kyoozyu-ga* 'most professors' – to the matrix subject position. This movement changes word order and yields a new output for the phonological interface, but it cannot induce scope interaction, so that there is no effect on the semantic interface. It seems that Scope Economy and Parallelism do not detect any significant output from the antecedent clause, and does not license the movement of the null raising subject in the elliptical clause in (36b), only allowing the narrow scope interpretation of the raising subject with respect to the matrix experiencer. The same effect holds with the scopally uninformative elliptical clause, as illustrated in (37).

(37) a. Taitei-no kyoozyu-ga$_i$ zyosi-gakusei-no dareka-ni-wa t_i
most-GEN professor-NOM female-student-GEN someone-DAT-TOP
nooberusyoo-o toru to omoeta.
Nobel.Prize-ACC win C seemed
'(Lit.) Most professors seemed to some female student to win the Nobel Prize.'

b. Taroo-ni-mo Δ nooberusyoo-o toru to omoeta.
Taro-DAT-TOP Nobel.Prize-ACC win C seemed
'(Lit.) Seemed to Taro to win the Nobel Prize.' (*scopally uninformative*)
(*most » some, some » most)

Although the antecedent clause alone may have scope ambiguity, it is disambiguated when followed by the ellipsis clause in (37b). This is because (37b) contains only one quantificational element, the null raising subject that takes *taitei-no kyoozyu-ga* 'most professors' as its antecedent; Scope Economy does not see any scope difference in the raising of the quantificational subject, and bans the movement of the elided element in (37b). From Parallelism it follows that the antecedent clause as well shows the obligatory narrow scope interpretation of the raising subject *taitei-no kyoozyu-ga* 'most professors'. It is intriguing to note that the surface scope in the antecedent clause seems to be the one where the raising subject 'most professors' taking scope over the matrix experiencer 'some female student', given that the former c-commands the latter after A-movement. Nevertheless, Scope Economy and Parallelism dictate that the antecedent clause only allow the raising subject to take narrow scope. From this, it is concluded that Scope Economy indeed restricts A-movement in the scopally

uninformative elliptical clause, and Parallelism puts restriction on the scope possibility of the antecedent clause based on the absence of the movement in the elliptical clause; the raising subject of the antecedent clause, even though it undergoes overt A-movement, is restricted to the narrow scope in a reconstructed position.

5 Conclusion

In this paper, based on the derivational [E]-marking of Takahashi (2012, 2013a, b, 2017) and Shibata's (2015) Morphological Merger analysis, I have argued that an element that is marked for AE in the course of syntactic derivation does not interfere with the Morphological Merger of predicate heads and can stay in situ, allowing the narrow scope of focus/quantificational elements. I have argued that, in such cases, scope possibilities of AE obey Scope Economy and Parallelism in Fox's sense; more specifically, I have suggested that when either the antecedent clause or the elliptical clause is scopally uninformative, it follows from Scope Economy and Parallelism that the sentences cannot yield inverse scope interpretation. When both of them are scopally informative, they may exhibit inverse scope in a way that obeys Parallelism.

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Footnotes

[1]However, Kitagawa (1994) and Watanabe (2000) observe that scope-rigidity is overridden by phonological manipulations. See also Sato and Maeda (2018) for a phase-based analysis on such scope interactions at the syntax-prosody interface.

[2]Note that the scopally uninformative elliptical clause does not prohibit the antecedent clause from taking wide scope with regard to negation. This is because the obligatory wide scope shown in (ia) is not because of optional scope-shifting operation, but because of the obligatory extraction out of *v*P for the purpose of Morphological Merger.

(i) a. Mary-wa [$_{DP}$ supeingo ka furansugo-o] hanas-**anai**.
Mary-TOP Spanish or French-ACC speak-NEG-PRES
b. John-wa Δ hanasu.
John-TOP speak
'(Lit.) Mary does not speak Spanish or French. John speaks.'
(or » neg, *neg » or)

[3]Saito and Hoshi (1998), Hoshi (1999), Saito (2000) and Kato (2003) argue for

V-V compounds. They argue that the absence of narrow scope for the object in (26) follows straightforwardly from the mono-structural property of the V-V compound. However, the compound analysis may face a challenge in accounting for the narrow scope under AE, as illustrated in (27).

[4]The scope interpretation where 'all' takes scope over negation may be derived from *pro*, where the elided clause exhibits the meaning equivalent to '*Yuki-wa sorera-o kesiwasureta* (Yuki forgot to turn off them).'

[5]The assumption that Scope Economy and Parallelism work only at the semantic interface is also supported by the following example, where the scrambling of the overt disjunctive element in the antecedent clause does not lead to scope ambiguity.

(i) [$_{DP}$ supeingo ka furansugo-o]$_i$ Mary-wa t_i hanas-u ga,
Spanish or French-ACC Mary-TOP speak-PRES but
John-wa Δ hanas-ana-i.
John-TOP speak-NEG-PRES
'(Lit.) Mary speaks Spanish or French, but John doesn't speak.'
(*or » neg, neg » or)