

Argument ellipsis involves movement

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1 Introduction

This paper investigates argument ellipsis, attested in languages like Japanese and Korean (Oku 1998; Kim 1999; Saito 2007). Under the standard analysis, arguments affected by argument ellipsis remain in situ. In contrast, I argue that argument ellipsis occurs in a way that elided elements must move to the matrix SpecCP, in line with Johnson's (2001) proposal for VP-ellipsis in English (see also Zagana 1982 and Aelbrecht and Harwood 2015; cf. Aelbrecht and Haegeman 2012). Johnson points out that the distribution of VP-ellipsis is correlated with the one of VP-fronting, and suggests that a VP affected by VP-ellipsis first undergoes VP-fronting. I show that the distribution of argument ellipsis is also correlated with its movement counterpart. In addition to the distributional similarity between ellipsis and movement, I provide several pieces of evidence that an element affected by argument ellipsis has actually undergone movement before it gets elided.

The organization of this paper is as follows. In Section 2, I point out that arguments do not always undergo ellipsis in Japanese, and argue that argument ellipsis is not based on whether the affected element is an argument or not, but rather on whether it can undergo movement or not. In Section 3, I show that an elided element behaves like its movement counterpart regarding locality, binding, and scope. Section 4 discusses implications of the proposed movement approach to ellipsis. Section 5 concludes this paper.

1.1 Setup: Diagnostic of argument ellipsis and movement

The main point of this paper is that there is a parallelism between argument ellipsis and movement. The ellipsis phenomena under investigation concerns Japanese examples like (1), where an object is left unpronounced. There are at least three ways to analyze the null object in (1) in Japanese.

- (1) a. *John-ga akai ringo-ni sawat-ta.*
John-NOM red apple-DAT touch-PAST
'John touched red apples.'
- b. *Bill-mo _____ sawat-ta.*
Bill-also _____ touch-PAST
lit. 'Bill touched ____, too.'
- (2) a. *Bill-mo pro sawat-ta.* 'Bill also touched them.'
b. *Bill-mo [N ec] sawat-ta.* 'Bill also touched apples.'
c. *Bill-mo [~~NP akai ringo-ni~~] sawat-ta.* 'Bill also touched red apples.'

In (2a), a null pronoun occupies the empty position and behaves as a definite pronoun such as ‘he/she/it/they’ (Kuroda 1965). For Hoji (1998), what he calls a supplied N head can occupy the empty position in Japanese as in (2b). The supplied N head is a phonologically empty element that behaves as a regular noun like *ringo* ‘apple.’ Its interpretation is specified by context. In (2c), the empty position is interpreted in the same way as its antecedent (Otani & Whitman 1991; Oku 1998, a.o), and this is what we call ellipsis (i.e. the antecedent is present at some point in the structure and undergoes ellipsis).

I will not discuss what is the exact source of definite *pro* and null indefinite N, and whether these strategies can be unified or not. What is important for our purposes is that the literature has shown that there are cases of missing arguments that quite clearly have to be analyzed as involving ellipsis, e.g. (2c) (see the references given below). The main concern of this paper will be the nature of argument ellipsis. Hence, in order to focus ellipsis, it is important to differentiate ellipsis from other strategies. There are a number of ways to distinguish between ellipsis and other strategies semantically; sloppy reading (Otani & Whitman 1991), quantificational reading (Takahashi 2008), cancelled polarity sensitivities (Sag 1976; Johnson 2001; Funakoshi 2013), and adjunct reading (Funakoshi 2016). These readings can be derived only under ellipsis, as the cited works have shown. In this paper, I will focus on sloppy reading that excludes readings that can be obtained by other strategies, as in (2a-b). In particular, a sloppy reading will be checked in contexts where only it becomes a true statement. To accomplish that, I embed null positions under negation (Saito 2007). For example, in a situation given in (3), the sloppy reading is true, while other readings are false.

- (3) (John touched his own apple, and Bill touched John’s apple but not his own apple.)

a. *John-ga zibun-no ringo-ni sawat-ta.*

John-NOM self-GEN apple-DAT touch-PAST

‘John touched his own apples.’

b. *Bill-wa _____ sawar-anak-atta.*

Bill-TOP touch-NEG-PAST

lit. ‘Bill did not touch __.’

pro: ‘Bill did not touch them.’ (False)

supplied N head: ‘Bill did not touch apples.’ (False)

ellipsis (/sloppy): ‘Bill did not touch his own apples.’ (True)

The overt counterparts of each strategy in (2) confirm the sloppy reading and other readings.

- (4) a. *Bill-wa sorera-ni sawar-anak-atta.*

Bill-TOP those-DAT touch-NEG-PAST

‘Bill did not touch them.’ (False: Definite pronoun)

- b. *Bill-wa ringo-ni sawar-anak-atta.*
 Bill-TOP apple-DAT touch-NEG-PAST
 ‘Bill did not touch apples.’ (False: Supplied N head)
- c. *Bill-wa zibun-no ringo-ni sawar-anak-atta.*
 Bill-TOP self-GEN apple-DAT touch-NEG-PAST
 ‘Bill did not touch his own apples.’ (True: Ellipsis)

As noted above, this paper shows that there is a parallelism between ellipsis and movement, in particular movement to the matrix SpecCP. In order to establish the parallelism, I will check whether the relevant elements can undergo movement to the matrix SpecCP in examples not involving ellipsis. In particular, I will check whether the relevant elements can undergo long-distance scrambling or not. This is because middle scrambling (i.e. movement to a clause initial position within a single clause) is often considered as movement to SpecTP (e.g. Miyagawa 1997). In this test, I use a simple noun for a moved element and an affirmative clause, as in (5a) rather than (5b) just for simplicity.

- (5) a. *Ringo-ni_i Mary-wa [Bill-ga t_i sawat-ta] to it-ta.*
 apple-DAT Mary-TOP Bill-NOM touch-PAST C say-PAST
 lit. ‘An apple, Mary thought that Bill touched *t*.’
- b. *[Zibun-no ringo]-ni_i Mary-wa [Bill-ga t_i sawaranakatta to] it-ta.*
 self-GEN apple-DAT Mary-TOP Bill-NOM not.touched C said
 lit. ‘Self’s apple, Mary thought that Bill touched *t*.’

2 Distribution of ellipsis and movement

The main claim of this paper is that an element affected by argument ellipsis first undergoes movement to the matrix SpecCP. In this section, I point out the distribution of argument ellipsis is similar to the one of movement. In Sect. 1.1, we have seen that a direct object can undergo argument ellipsis (cf. 3b) and long-distance movement (cf. 5a). Subjects can also undergo argument ellipsis (Oku1998).

- (6) a. *John-wa [zibun-no ronbun-ga jaanaru-ni nor-u to] omotta.*
 John-TOP self-GEN paper-NOM journal-DAT appear-PRES C thought
 ‘John_i thought that his_i paper would appear in a journal.’
- b. *Bill-wa [_____ jaanaru-ni nor-ana-i to] omotta*
 Bill-TOP journal-DAT appear-NEG-PRES C thought
 lit. ‘Bill thought that ____ would not appear in a journal.’
 Sloppy: ‘Bill_j thought that his_j paper would not appear in a journal.’

The sloppy reading in (6b) tells us that it is derived by ellipsis of subjects. The subject can also be scrambled, as indicated in (7) (Yamashita 2013).

- (7) *Kono-ronbun-ga Bill-wa [t jaanaru-ni nor-u to] omotta.*
 this-journal-NOM Bill-TOP journal-DAT appear-PRES C thought
 ‘This paper, Bill thought [that t would appear in a journal].’

So far, we have seen that argument ellipsis can be applied to regular arguments as its name suggests. In the rest of this section, it will be, however, shown that not all arguments can be elided. Specifically, I show that the availability of deleting an element in Japanese is not based on whether it is an argument or not, but rather whether it can undergo movement or not.

2.1 Multiple subjects

First, let us now consider multiple subject constructions in Japanese. In this construction, multiple subjects have a so-called “aboutness” relation (Kuno 1973). In (8), the subject-oriented anaphor *zibun* can refer to ‘John’ or ‘wife’.

- (8) *Johni-wa okusanj-ga zibunij-no heya-de nemutte i-ru.*
 John-TOP wife-NOM self-GEN room-in sleep be-PRES
 ‘As for John_i, his wife_j is sleeping in self_{i/j}’s room.’

In this sentence, the inner subject ‘his wife’ cannot move across the first subject. (9) illustrates this point with long-distance scrambling. It is ungrammatical regardless of which markers are attached to the subject, nominative case marker or topic marker.

- (9) **Okusanj-ga/wa, Mary-wa [Johni-ga t zibunij-no heya-de*
 wife-NOM/TOP Mary-TOP John-NOM self-GEN room-in
nemutte i-ru to] omotta.
 sleep be-PRES C thought
 lit. ‘his wife, Mary thought [that as for John, t is sleeping in self’s room].’

(10b) suggests that the inner subject cannot be contained in its meaning taking (10a) as its antecedent. The only reading in (10b) is that Bill is not sleeping in his room.

- (10) a. *John-wa zibun-no okusan-ga heya-de nemutte i-ru.*
 John-TOP self-GEN wife-NOM room-in sleep be-PRES
 ‘As for John_i, his_i wife is sleeping in her room.’
 b. *Billi-wa _____ heya-de nemutte i-nai.*
 Bill-TOP room-in sleep be-NEG
 ‘Bill is not sleeping in his room.’
 *‘As for Bill_j, his_j wife is not sleeping in her room.’

The above data shows that not all arguments can undergo deletion. Importantly for our purposes, the unavailability of ellipsis here correlates with the unavailability of movement.¹

2.2 Nouns followed by a numeral

In Japanese, there are three ways to put a numeral in relation to the head noun and the case particle, as illustrated in (11).

- (11) a. *John-wa san-satsu-no hon-o katta.* [NumP-gen NP-Case]
 John-TOP three-CL-GEN book-ACC bought
 ‘John bought three books.’
- b. *John-wa hon-o san-satsu katta.* [NP-case NumP]
 John-TOP book-ACC three-CL bought
- c. *John-wa hon san-satsu-o katta.* [NP NumP-case]
 John-TOP book three-CL-ACC bought

We focus on the head noun in postnominal numeral constructions like (11b) and (11c). In (11b), an accusative case marker is attached to the head noun, whereas it is attached to the numeral in (11c).

Importantly, when the head noun does not have a morphological case, it cannot undergo movement, as shown in (12).

- (12) a. *Hon-o, Mary-wa [John-ga t san-satsu katta to] omotta.*
 book-ACC Mary-TOP John-NOM three-CL bought C thought
 ‘books, Mary thinks that John bought three t.’
- b. **Hon Mary-wa [John-ga t san-satsu-o katta to] omotta.*

Their ellipsis counterparts show the same paradigm. In (13), an accusative case marker is attached to the head noun. This head noun can get deleted as shown in (13b). In contrast, an accusative marker is attached to the numeral in (14). In this case, the head noun cannot be deleted, as in (14b) (cf. Terada 1990).

- (13) a. *John-wa zibun-no hon-o san-satsu katta.* [NP-case NumP]
 John-TOP self-GEN book-ACC three-CL bought
 lit. ‘John bought three [self’s books].’
- b. *Bill-wa _____ san-satsu kawanakatta.*
 lit. ‘Bill didn’t buy three ____.’ (Sloppy)
- (14) a. *John-wa zibun-no hon san-satsu-o katta.* [NP NumP-case]
 John-TOP self-GEN book three-CL-ACC bought

¹ Kim (1999) and Takita (2011) also observe the same pattern in multiple object constructions in Korean and Japanese, respectively. They show that the inner object that cannot undergo (long-distance) movement cannot be elided.

- b. **Bill-wa* _____ *san-satsu-o* *kawanakatta*.
lit. ‘Bill didn’t buy three ____.’

These postnominal numeral constructions nicely illustrate the correlation between movement and ellipsis. The head noun can undergo movement with a morphological accusative case, but not without it. Similarly, it can get deleted in the former but not in the latter. This is also expected under the movement approach to ellipsis.

2.3 Korean ECM

Now, let us examine Korean ECM constructions. It is also known that Korean allows ellipsis of arguments (Kim 1999). Yoo (2018) observed that when an embedded subject is assigned accusative by the matrix verb, the clause-mate accusative object cannot cross the accusative-assigned subject. The sentences in (15) are simple sentences, not ECMs. In this case, the embedded object can undergo long-distance scrambling across the nominative-marked embedded subject. On the other hand, this is prohibited in the ECM constructions in (16), where the embedded subject is assigned accusative.

- (15) a. *John-un* [*Mary-ka* *cinkwu-ul* *ttaylyessta-ko*] *sayngkakhayss-ta*.
John-TOP Mary-NOM friend-ACC hit-C thought-DECL
‘John thought that Mary hits a friend.’
b. *Cinkwu-ul_i* *John-un* [*Mary-ka* *t_i* *ttaylyessta-ko*] *sayngkakhayss-ta*.
- (16) a. *John-un* [*Mary-ul* *cinkwu-ul* *ttaylyessta-ko*] *sayngkakhayss-ta*.
John-TOP Mary-ACC friend-ACC hit-C thought-DECL
‘John thought that Mary hits a friend.’
b. **Cinkwu-ul_i* *John-un* [*Mary-ul* *t_i* *ttaylyessta-ko*] *sayngkakhayss-ta*.

Whatever explanation for this, the prediction under the movement approach to ellipsis is that the embedded accusative marked object should not be able to be elided in Korean ECM constructions. This prediction is indeed borne out. Compare (17a) with (17b). In (17a), the embedded subject is marked with nominative, while the one in (17b) is accusative. The embedded object in (17a) can undergo ellipsis, taking (15a) as an antecedent. Crucially, taking (16a) as an antecedent, the embedded object in (17b) cannot get deleted. In (17b), *Sue* cannot be interpreted as a subject. The most salient meaning of (17b) is that Bill thought that Mary hits Sue.²

² One may consider that the issue here is that the accusative-marked phrase in (17b) is easy to be processed as an object because it has an accusative particle, which is normally attached to objects. However, note that even when a verb that takes an inanimate object is used, an accusative animate phrase cannot be interpreted as an embedded subject, as in (i).

- (i) a. *John-un* [*Mary-lul* *chuk-ul* *ilknunta-ko*] *sayngkakhayssta*.
John-TOP Mary-ACC book-ACC read-C thought
‘John thought that Mary reads books.’

- (17) a. *Bill-un [Sue-ka ___ ttaylyessta-ko] sayngkakhayss-ta.* (ant.15a)
 Bill-TOP Sue-NOM hit-C thought-DECL
 ‘Bill thought that Sue hit a friend.’
- b. **Bill-un [Sue-ul ___ ttaylyessta-ko] sayngkakhayss-ta.* (ant.16a)
 Bill-TOP Sue-ACC hit-C thought-DECL
 int. ‘Bill thought that Sue hit a friend.’

This is also expected if we assume that ellipsis occurs after movement.

In this section, we have seen that elements which do not undergo movement cannot get deleted even when they behave as an argument. This supports the idea that the availability of argument ellipsis correlates with movability (see Fujiwara 2019 for more data illustrating this point).

3 Evidence of movement

This section provides evidence that elided elements move to the matrix SpecCP. In particular, it is shown that ellipsis shows island-effects and that elided elements can be interpreted in a higher position than their in-situ position, which I will show can be captured under the proposed movement analysis.

3.1 Locality

We consider island effect in this subsection. Let us first see a non-island case. In (18), the embedded object contains an anaphor, and it can get elided in (18b) (Takahashi 2013). As shown in (18c), the embedded object can move to the sentence initial position when the embedded clause is not an island.

- (18) a. *John-wa [kodomotati-ga zibun-no kuruma-o aratta to] itta kedo,*
 John-TOP children-NOM self-GEN car-ACC washed C said but
 ‘John said that children washed his own car.’
- b. *Bill-wa [kodomotati-ga ___ araw-nak-atta to] itta.*
 Bill-TOP children-NOM wash-NEG-PAST C said
 lit. ‘Bill didn’t say that they washed ___.’
 Sloppy: ‘Bill didn’t say that they washed his own car.’
- c. *Kuruma-o, Bill-wa [kodomotati-ga t aratta to] itta.*
 lit. ‘cars, Bill said that they washed t.’

On the other hand, elements cannot be scrambled out of islands. (19) illustrate this point with an adjunct island:

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- b. **Bill-un [Sue-lul _____ ilknunta-ko] sayngkakhayssta.*
 Bill-TOP Sue-ACC read-C thought
 int. ‘Bill thought that Sue reads books.’

Thus, the impossibility to interpret the accusative-marked phrase in (17b/ib) as the embedded subject cannot be attributed just to a processing difficulty.

- (19) **Kuruma-o Bill-wa [kodomotati-ga t ara-u toki] tetsuda-u.*
 car-ACC Bill-TOP children-NOM wash-PRES when help-PRES
 lit. ‘cars, Bill helps them when children wash t.’

Ellipsis also exhibits island sensitivity. (20a) is an antecedent sentence. In (20b), an object inside an adjunct clause is missing, but a sloppy reading cannot be obtained. Thus, (20c) cannot be followed by (20b) because a reading that can be obtained by a supplied N head contradicts (20c).

- (20) a. *John-wa [kodomotati-ga zibun-no kuruma-o arau toki] tetsudau.*
 John-TOP children-NOM self-GEN car-ACC wash when help
 ‘When children wash his_i car, John_i help them.’
- b. *Bill-wa [kodomotati-ga _____ araw-anai toki] tetsudau.*
 Bill-TOP children-NOM _____ wash-NEG when help
 ‘Bill help them when they do not wash ____.’
 Sloppy: *‘Bill help them when they do not wash his car.’
 Supplied N head: ‘Bill help them when they do not wash cars.’
- c. #(*Bill-wa*) [(*kodomotati-ga*) *John-no kuruma-o arau toki*] *tetsudau.*
 Bill-TOP children-NOM John-GEN car-ACC wash when help
 ‘He helps them when they wash John’s car.’

The island sensitivity of argument ellipsis suggests that an elided element undergoes movement to the matrix SpecCP.

3.2 Reflexive

In this subsection, we will see that elided elements can be interpreted higher than their in-situ position. As shown in (21), movement changes the binding relation of Japanese local anaphors. In (21a), *herself* is located in the embedded object position and cannot refer to the matrix subject *Mary*, which shows that *herself* is a local anaphor. However, as can be seen in (21b), when this reflexive undergoes long-distance scrambling, it can refer to the matrix subject *Mary* (cf. Saito 2003). This is because the reflexive can satisfy Condition A while moving to the target position.

- (21) a. **Mary-wa [John-ga kanojozisin-no keiken-o hanasi-tagar-*
 Mary-TOP John-NOM herself-GEN experience-ACC tell-want-
anai to] omotta.
 NEG C thought
 lit. ‘Mary thought that John does not want to tell herself’s experience.’
- b. [*Kanojozisin-nokeiken-o*]_i *Mary-wa* [_{CP} *t*_i [_{CP} *John-ga t*_i *hanasi-tagar-*
anai to]] *omotta.*
 ‘Herself’s experience_i, Mary thought [that John does not want to tell t_i].’

- (22) a. *Nancy-mo* [_{CP} *Bill-wa* ____ *hanasi-tagara-nai to*] *omotta*. (ant.21b)
 Nancy-also Bill-TOP tell-want-NEG C thought
 lit. ‘Nancy also thought [that Bill does not want to tell __].’ (Sloppy)
- b. **Nancy-mo* [_{CP} *Bill-wa kanojozisin-nokeiken-o hanasi-tagar-*
 Nancy-also Bill-TOP herself-GEN experience-ACC tell-want-
anai to] *omotta*.
 NEG C thought
 ‘Nancy also thought that Bill does not want to tell herself’s experience.’

Taking (21b) as an antecedent, (22a) has a null object position. Importantly, (22a) is grammatical and moreover, it yields a sloppy reading. Note that when the embedded object is pronounced, as in (22b), the sentence is ungrammatical. This suggests that the elided anaphor in (22a) has moved, as in (21b).³

3.3 Reciprocal

Movement also changes a binding relation of reciprocal. In (23a), the binding condition of the reciprocal *otagai* is not satisfied and the sentence is ungrammatical. On the other hand, the reciprocal *otagai* is successfully bound when the coordinated objects undergo movement, as illustrated in (23b).

- (23) a. **Mary-wa* [*otagai-no sensei-ni [zibun-no musuko to*
 Mary-TOP each.other-GEN teacher-DAT self-GEN son and
musume-o] (*nazeka*) *hihans]-ase-ta*.
 daughter-ACC for.some.reason criticize-caus-PAST

³ Here, I crucially assume that the reflexive *herself* does not undergo vehicle change (Fiengo & May 1994) into a pronoun *her* in order to derive a sloppy reading. If this change happened, the elided object could establish a binding relation with *Nancy*, as in (i).

- (i) *Nancy-mo* [_{CP} *Bill-wa kanojo-nokeiken-o hanasi-tagara-nai to*] *omotta*.
 Nancy-also Bill-TOP her-GEN experience-ACC tell-want-NEG C thought
 ‘Nancy also thought [that Bill does not want to tell her experience].’

Interestingly, vehicle change cannot be applied in order to obtain a sloppy reading. Consider English example in (ii), where the antecedents of the first reflexive and of the elided reflexive are mismatched (i.e. John and Bob, respectively). Crucially, as the translation indicates, the elided anaphor *himself* cannot refer the matrix subject in the second clause *Bob*.

- (ii) *John_i believes himself_i to be heroic, and Bob_j said that Mary does ~~believe himself_i to be heroic~~, too.*
 ‘... and Bob said that Mary believes John/*Bob to be heroic, too.’
- (a) *Bob_j said that Mary believes himself_{i/j} to be heroic, too.
 (b) Bob_j said that Mary believes him_i to be heroic, too. (i.e. strict reading)
 (c) Bob_j said that Mary believes him_j to be heroic, too. (i.e. sloppy reading)

This is unexpected if the elided reflexive were able to undergo vehicle change as in (iic). In other words, this suggests that vehicle change cannot be applied to get a new binding relation. Therefore, I conclude that the sloppy reading in (22a) does not come from vehicle change but from a binding relation between the elided local anaphor and the matrix subject *Nancy* established by movement.

‘For some reason, Mary made [each other’s teachers criticize [self’s son and daughter]].’

- b. [*Zibun-no musuko to musume-o*]_i, *Mary-wa* [*otagai-no sensei-ni t_i* (*nazeka*) *hihans-ase-ta*.
‘[self’s son and daughter]_i, for some reason, Mary made [each other’s teachers criticize t_i].’

Taking (23b) as an antecedent, the object can undergo deletion, as shown in (24). The grammaticality of (24a) suggests that the elided object moves as in (24b) (Takahashi 2008). In addition, a sloppy reading can be obtained in (24a). (24b) followed by (24a) confirms the sloppy reading in (24a).

- (24) a. *Demo Nancy-wa* [*otagai-no sensee-ni* __ *hihans*]-*ase-nak-atta*.
but Nancy-TOP each.other-GEN teacher-DATcriticize-caus-NEG-PAST
lit. ‘but Nancy didn’t make [each other’s teachers criticize __].’ (Sloppy)
- b. *Sorezore-no sensei-ni* *hihans-ase-ta*.
each-GEN teacher-DAT criticize-caus-PAST
‘She made each teacher criticize her son and daughter.’

3.4 Scope

Japanese is a so-called scope rigid language. In this kind of a language, the scope interaction between a subject and object in canonical sentences tends to be determined based on the surface structure. For example, (25a) yields only the surface reading (some > most) and cannot provide the inverse reading (most > some). However, when the embedded object undergoes long-distance scrambling and scrambles over the embedded subject, the sentence becomes ambiguous, as in (25b).

- (25) a. *John-wa* [*dareka-ga* [*taitei-no gakusei-o*] *sikatta to*] *omotta*.
John-TOP someone-NOM most-GEN student-ACC scolded C thought
‘John thought that someone scolded most students.’
(some > most)/ *(most > some)
- b. [*Taitei-no gakusei-o*] *John-wa* [*dareka-ga t* *sikat-ta to*] *omotta*.
‘Most students, John thought that someone scolded t.’
(some > most)/ (most > some)

This suggests that movement of the object feeds the “inverse scope” reading (most > some). This reading can also be obtained when the object is elided (Takahashi 2008). (26a) is an antecedent sentence and (26b) has the null object position. Crucially, (26b) exhibits the “inverse scope” reading, which can be only obtained by movement of the object as we have just seen in (25b). Notice that if the object position is filled by the same object as the antecedent sentence in (26a), then the sentence cannot show the (most > some) reading, as in (26c).

- (26) a. [*Taitei-no gakusei-o*] *John-wa* [*kinoo dareka-ga t sikatta*
 most-GEN student-ACC John-TOP yesterday someone-NOM scolded
to] *omotta*.
 C thought
 ‘John thought [that someone scolded most students yesterday].’
 (some > most)/ (most > some)
- b. *Bill-wa* [*kyoo dareka-ga _____ sikatta to*] *omotta*.
 Bill-TOP today someone-NOM scolded C thought
 ‘Bill thought [that someone scolded ___ today].’
 (some > most)/ (most > some)
- c. #*Bill-wa* [*kyoo dareka-ga taitei-no gakusei-o sikatta to*] *omotta*.
 ‘Bill thought [that someone scolded most students today].’
 (some > most)/ *(most > some)

This demonstrates that the elided object in (26b) occupies a higher position than the existential subject. The availability of the (most > some) reading in (26b) naturally follows from the movement approach to ellipsis; the elided element undergoes movement, as in (26b), before it gets deleted.

4 Implications

I have argued so far that an element affected by argument ellipsis has undergone movement to the matrix SpecCP before it gets elided and shown that argument ellipsis and movement are strongly correlated. I assume that the reason why elided elements move to the matrix CP is that only in this position, they can take a linguistic antecedent from linguistic context. In other words, the topichood of ellipsis (in a sense that what is elided is old information) is reflected in syntax.

The idea that a null element is identified in the matrix CP is not new; the relation between the matrix CP and the discourse context has also been investigated in other phenomena, especially topic drop in other languages (Tsao 1977; Huang 1984; Cardinaletti 1990; Rizzi 1994; Sigurðsson & Maling 2010; Bošković 2011, a.o). For example, Rizzi (1994) defines this position in terms of the identification requirement of the Empty Category Principle (ECP). According to him, empty categories except *pro* and PRO must be identified by being chain-connected to an antecedent unless they occupy the specifier of the root clause, where they can be identified from discourse context. In Sigurðsson and Maling (2010), null elements are licensed by a context-linking element such as topic, logophoric agent/speaker and logophoric patient/hearer, which is placed higher than regular CPs. Following Sigurðsson and Maling (2010), Bošković (2011) assumes that the licensing of the relevant null elements is established via movement to the specifier of those context-linking projections.

In this section, I would like to discuss implications of the proposed analysis. First, I argue that the movement approach to argument ellipsis opens a possibility

to unify ellipsis phenomena in Japanese. Importantly, it has been argued that other types of ellipsis in Japanese also involves movement in their derivations; Hiraiwa & Ishihara (2012) propose that clauses which are deleted under sluicing first move to SpecTopP; Funakoshi (2014) argues that verb-stranding VPs in Japanese undergo ellipsis after movement; Goto (2012) claims that elided elements under particle-stranding ellipsis, which occurs only at the sentential initial position, first move to SpecTopP. Therefore, I argue that other types of ellipsis also fall under the movement approach to ellipsis.

It should be also noted that the movement approach to argument ellipsis still captures the main intuition behind Oku's (1998) analysis of argument ellipsis. Oku's analysis is based on Bošković & Takahashi's (1998) weak-strong distinction of theta-features. According to them, theta-features are weak in Japanese and they are checked at LF, whereas theta-features are strong in English and must be checked before LF. They argue that "scrambled" elements in Japanese are in fact base-generated and they undergo lowering to the relevant theta position to check a theta feature in LF. On the other hand, they argue that languages like English do not allow Japanese-type scrambling because theta-features must be checked before LF in these languages. Oku argues that LF-copying is another way to check theta-features at LF in Japanese. Although theta-roles do not always explain the (un)availability of argument ellipsis, as we have seen in Sect. 2, (i.e. there are arguments that cannot undergo argument ellipsis),⁴ the proposed movement approach to argument ellipsis still captures the main intuition behind Oku's analysis of argument ellipsis, that is, the correlation between argument ellipsis and long-distance scrambling.

The proposed movement approach to ellipsis can be naturally implemented given the copy theory of movement (cf. Chomsky 1995; Johnson 2001). Under the copy theory of movement, traditional movements involve Internal Merge and Deletion of lower copies. If Deletion can be applied to a copy, there are four logical possibilities regarding applying Deletion to two identical copies, as illustrated in (27). The current proposal fits into the fourth case.

- (27) A: X ... ~~X~~ (i.e. regular movement)
 B: ~~X~~ ... X (e.g. certain multiple *wh*-fronting)
 C: X ... X (e.g. resumptive pronouns, German *wh*-copy construction)
 D: ~~X~~ ... X (i.e. ellipsis)

(27A) illustrates traditional movement, where the higher copy is pronounced and the lower one is deleted. In contrast, the higher copy gets deleted and the lower one is pronounced in (27B). This marked case is observed, for example, in Bulgarian, Serbo-Croatian, Romanian, and Russian when phonologically identical *wh*-words undergo multiple *wh*-fronting, as discussed in Bošković (2002), who argues that this occurs only when the pronunciation of the highest copy would cause a PF-

⁴ See also Fujiwara (2019) for arguments against the LF-copy approach to argument ellipsis

violation. In the third case (27C), both of the two copies are pronounced, which can be attested in cases where the lower pronoun is represented as a resumptive pronoun. I would like to argue that the fourth case (27D) is an instance of ellipsis. In (27D), all copies are deleted. Obviously, in a usual case, deletion of all the copies would create a recoverability problem: elided elements must be recoverable. In (27A) and (27B), the elided elements can be recovered from their copies. As for (27D), I suggest that the highest copy is recoverable only when it occupies the matrix SpecCP, where it can find a linguistic antecedent from discourse. The recoverability of deletion requirement is then in a sense what is behind the movement involved in ellipsis. The copy theory of ellipsis is also conceptually desirable since we do not need to posit special operations for ellipsis phenomena. Ellipsis is an instance of movement under this approach, which applies in the usual copy-and-delete way.

Although the copy theory of ellipsis is conceptually desirable, it is empirically difficult to be extended to other kinds of ellipsis, especially, ellipsis of phasal complements such as sluicing (i.e. TP-ellipsis) and N'/NP-ellipsis because the movement counterparts (e.g. TP-movement and NP-movement) are not attested. Probably, the reason why we do not see the movement counterparts of ellipsis of phasal complements is that such movement violates the Anti-locality (Bošković 1994; Saito & Murasugi 1999; Abels 2003), which bans movement that is too short. More precisely, under the anti-locality, the complement of phase X cannot move to the edge of XP (and phasal complements have to undergo such movement given the PIC). Thus, it appears that it would be wrongly predicted under the movement approach to ellipsis that phasal complements such as TP and NP cannot undergo ellipsis due to the anti-locality. One possibility to avoid this problem is to assume that the violation of the anti-locality is ameliorated in ellipsis of phasal complements. In fact, Bošković (2013) argues that anti-locality violations can be repaired by deleting the head of the phase where the anti-locality violation occurs. This would imply that ellipsis of phasal complements cannot be derived without deleting the phase head under the movement approach to ellipsis (i.e. the phase head would also need to be deleted). Interestingly, this provides an account for Merchant's (2001) sluicing-comp generalization, that is, the generalization that the C head must be deleted in sluicing. I would like to leave a more careful investigation for future work.

5 Conclusion

This study has investigated argument ellipsis. I have claimed in Sect. 2 and 3 that argument ellipsis involves movement to the matrix SpecCP, in line with Johnson's (2001) suggestion for English VP-ellipsis. In Sect. 2, I have pointed out that the distribution of argument ellipsis is correlated with its movement counterpart. It has been also shown in Sect. 3 that argument ellipsis exhibits island sensitivity and changes binding and scope relations in the same way as movement. In Sect. 4, I have argued that the proposed movement approach opens a possibility to unify ellipsis phenomena in Japanese. In addition, I have pointed out that the proposed movement approach to ellipsis can be naturally implemented under the copy theory

of movement. Under the copy theory, a regular movement deletes lower copies and pronounces the highest copy, whereas all the copies are deleted in ellipsis; this happens because the highest copy is still recoverable.

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