Movement Approach to Argument Ellipsis: A PF-deletion analysis
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Introduction: This paper investigates argument ellipsis (AE), attested in languages like Japanese and Korean (Oku 1998; Kim 1999; Saito 2007; Sakamoto 2017). AE can be applied to arguments like subjects, objects and clausal complements. It has been analyzed as involving LF-copy since it was first proposed by Oku (1998). This LF-copy analysis assumes that a missing argument is not present in overt syntax, and it is copied onto a relevant theta-position at LF from a linguistic context without its phonological feature (1).

1a. Overt syntax: Subj [$_{VP}$ V]   1b. LF: Subj [$_{VP}$ Obj V]   [LF-copy]

In contrast to the standard analysis, I argue that AE is derived by PF-deletion. More precisely, AE occurs in a way that an elided element must move to the matrix SpecCP in overt syntax (2), in line with Johnson's (2001) proposal for VP-ellipsis in English. Following Rizzi (1994), I assume that the specifier of the root is the only position where an elided element is recoverable from the linguistic context.

2a. Overt syntax: [$_{CP}$ Obj [Subj *t* V]]   2b. PF: [$_{CP}$ ~~Obj~~ [Subj *t* V]]   [PF-deletion]

Overt Extraction: The argument for the LF-copy analysis is that an element cannot be overtly extracted out of an ellipsis site (Shinohara 2006; Saito 2007; Sakamoto 2017).

3a. *Sono hon-o   Taro-wa [$_{CP}$ Hanako-ga t katta to] itta si,*   (antecedent)
   that book-ACC Taro-TOP   Hanako-NOM   bought C   said and
   lit. 'That book, Taro said that Hanako bought *t*, and…'

3b. **Sono hon-o   Ziro-mo _____ itta.*   (CP ellipsis)
   that   book-ACC Ziro-also   said
   lit. 'That book, Ziro also said ___.'   (Saito 2007, 210)

In (3b), the embedded object is extracted out of the missing CP by scrambling. The ungrammaticality of (3b) can be straightforwardly captured by the LF-copy analysis: the elided CP is not present in overt syntax so that no elements can be extracted out of it. Under the proposed approach, the ungrammaticality of (3b) is attributed to the ungrammaticality of its movement counterpart (4).

4. **[$_{CP}$ Hanako-ga t katta to], sono hon-o   Ziro-mo* t$_{CP}$ *itta.*   (CP movement)
   Hanako-NOM   bought C   that book-ACC Ziro-also   said

In contrast to the LF-copy analysis, the proposed approach can also capture cases where extraction out of an ellipsis site is possible (cf. Sakamoto 2016). Consider Japanese ECM constructions. In (5a), the embedded subject *Hanako* has moved out of the embedded CP and gets accusative (Kuno 1976; Tanaka 2002). The pronoun *soo* optionally appears and behaves like an expletive. Interestingly, as shown in (5b), the embedded CP can be elided when *soo* appears, while it cannot without *soo*.

5a. *Hanako-wa Taro-o   orokanimo [$_{CP}$ t tensai da to] (soo) omotta.* (antecedent)
   Hanako-TOP Taro-ACC stupidly   genius cop C   so   thought
   'Hanako stupidly thought that Taro is a genius.'

5b. *Sachiko-wa Ziro-o   orokanimo _____*(soo) omotta.*   (CP-ellipsis)
   Sachiko-TOP Ziro-ACC stupidly   so   thought
   'Sachiko stupidly thought ~~that~~ Ziro ~~is a genius~~.'

In other words, in this construction, extraction out of the elided CP is possible only when *soo* appears. Crucially, the same paradigm is also observed in movement. The embedded CP can undergo movement only when *soo* appears (6).

6. *[$_{CP}$ t tensai da to] Sachiko-wa Ziro-o orokanimo* t$_{CP}$ **(soo) omotta.* (CP-movement)

Thus, the possibility of extraction out of an ellipsis site depends on whether the elided clause can move to the matrix SpecCP, which is predicted under the proposed approach. I will present a number of other cases which show correlation between movability and ability to undergo AE.

Two pieces of evidence for PF-deletion: <u>*Binding*</u>: If an element undergoing AE is deleted only after movement, we would expect that there would be cases where it would be interpreted in a higher position than its theta position. This expectation is indeed borne out. Japanese long-distance scrambling changes the binding relation of Japanese local anaphors (7). While *herself* in the embedded object cannot be bound by the matrix subject *Mary* in in-situ (7a), it can when it undergoes long-distance scrambling (7b: cf. Saito 2003).

7a. *_Mary-wa_ [CP _John-ga   kanojozisin-no keiken-o   hanasi-tagaranai to] omotta._
     Mary-TOP   John-NOM   herself-GEN experience-ACC tell-want.not   C   thought
     lit. 'Mary thought that John does not want to tell herself's experience.'

7b. _[Kanojozisin-no keiken-o]ᵢ Mary-wa [CP t'ᵢ [John-ga   tᵢ hanasi-tagaranai to]] omotta._

Note that the binding relation between _Mary_ and _herself_ in (7b) is established in the intermediate position _t'_. Importantly, when the object containing the local anaphor undergoes AE, the sentence is still grammatical, as shown in (8).

8. _Nancy-mo   [CP Bill-wa _____   hanasi-tagara-nai to]   omotta._   (antecedent: 7b)
    Nancy-also   Bill-TOP   tell-want-NEG   C   thought
    'Nancy also thought [that Bill does not want to tell herself's experience].'

This provides evidence that the elided element containing the anaphor _herself_ has moved and established the binding relation with _Mary_ in the intermediate position _t'_, as in (7b). The LF-copy analysis is difficult to capture this binding relation since, by assumption, an elided element is copied onto the relevant theta-position to get theta-marked (Oku 1998).

Elided conjunction: I show that an elided coordinated object can be interpreted under negation, while an elided subject cannot. This subject-object asymmetry cannot be captured by the LF-copy analysis since the theta-positions of both subject and object are under negation. It has been observed that an object with _-mo-mo_ conjunction must take scope over negation (9a: Goro 2007), whereas it can take scope under negation when it is elided (9b: Funakoshi 2013).

9a. _John-wa   [ninjin-mo   piiman-mo]   tabe-nak-atta._
    John-TOP   carrot-also   pepper-also   eat-NEG-PAST
    lit. 'John didn't eat the carrot and the pepper.'
    *(not > and): It is not the case that John ate both the carrot and the pepper.
    (and > not): It is both the carrot and the pepper that John didn't eat.

9b. _Bill-wa   [ninjin-mo piiman-mo] tabeta kedo, John-wa ____ tabenakatta._
    Bill-TOP carrot-also pepper-also ate   but   John-TOP   didn't.eat
    lit. 'Bill ate the carrot and the pepper, but John didn't eat ____.' ^OK(not > and)/ (and > not)

If an elided element is copied onto its theta-position under the LF-copy analysis, an elided subject with this conjunction should also be able to take scope under negation given that an external theta-role is assigned in Spec_v_P. However, this prediction is not borne out.

10a. _[Bill-mo John-mo] ninjin-o   tabeta yo._ 10b. _Demo, ____ piiman-wa tabenakatta yo._
    Bill-also John-also carrot-ACC ate   PRT   but   pepper-TOP didn't.eat PRT
    lit. 'Bill and John ate the carrot.'   'But ___ didn't eat the pepper.'
    *(not > and): It is not the case that Bill and John ate the pepper.
    (and > not): Both Bill and John didn't eat the pepper.

In (10b), the coordinated subject, which undergoes ellipsis, cannot be interpreted under negation. I take this as evidence that elided conjunction enters into scope interaction with negation in its case position, not theta-position. This suggests that the elided subject in (10b) undergoes A-movement to SpecTP in overt syntax, which supports the PF-deletion analysis.

Implication: The proposed approach might enable us to eliminate LF-copy from the grammar. In fact, positing LF-copy in the grammar is not desirable in terms of Inclusiveness Condition (Chomsky 1995). LF-copy is an operation that copies an item in previous linguistic contexts onto a relevant position in current syntactic computation. This means that something like coindexation, which would violate Inclusiveness Condition, is necessary in order to establish the relation between the copied and original elements.

On the other hand, the proposed approach to AE brings us desirable results. It suggests a unification of ellipsis and movement, which is a natural consequence under the copy theory. In movement, the topmost copy is pronounced, and the lower copies undergo deletion. It is not possible to delete all copies due to recoverability of deletion. On the other hand, in ellipsis, the topmost copy is also deleted as well as the lower copies because deletion here is recoverable. In particular, it is recoverable only when the higher copy occupies the matrix SpecCP, where it can take an antecedent from the linguistic context. Importantly, it has been argued that other types of ellipsis in Japanese also involves movement in their derivations such as sluicing (Hiraiwa and Ishihara 2012), V-stranding VP-ellipsis (Funakoshi 2014), and particle-stranding ellipsis (Goto 2012). Thus, I argue that other types of ellipsis also fall under the proposed movement approach. The elided elements in all these cases move to the matrix SpecCP.