Looking at Argument Ellipsis Derivationally
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1. Introduction


1.1. Argument ellipsis has been analyzed in terms of copying (Oku (1998), Saito (2007), Takahashi (2006), etc.).

1.2. The aim of the present study is to propose a deletion analysis of argument ellipsis.

1.3. This presentation is organized as follows:
   Section 2: some background on argument ellipsis
   Section 3: a deletion analysis proposed
   Section 4: further considerations
   Section 5: conclusion
2. Some Background

2.1. Properties of Argument Ellipsis

Property #1: Elision of arguments is possible only if they do not enter into Agree relation with functional heads. (the anti-agreement property: Saito (2007), Şener and Takahashi (2010), and Takahashi (to appear))

As is observed by Oku (1998), subjects can be elided in Japanese, where subject agreement as well as object agreement is absent, whereas null subjects in Spanish, a rather rich-agreement language, cannot be elliptic.

(3) a. Taroo-wa [zibun-no kodomo-ga piano-o hiku to] itta.  
   'lit. Taroo said that self’s child played the piano.’

   b. Hanako-wa [e kurarinetto-o fuku to] itta.  
   'lit. Hanako said that e played the clarinet.’
   = Hanako said that {Taroo’s /Hanako’s} child played the clarinet.

(4) a. María cree [que su propuesta será aceptada].  
   ‘Maria believes that her proposal will be accepted.’

   b. Juan también cree [que e será aceptada].  
   ‘Juan also believes that it will be accepted.’
   = Juan believes that {Maria’s / * Juan’s} proposal will be accepted.

The anti-agreement property of argument ellipsis is confirmed by Şener and Takahashi (2010), who point out that in Turkish, which exhibits subject agreement, but not object agreement, null subjects cannot be elliptic but null objects can.

   ‘John knows that his son learns English.’

   b. Filiz-se [e Fransızca öğren-iyor diye] bil-iyor.  
   ‘lit. Phylis, however, knows that e learns French.’
   = Phylis knows that {John’s / * Phylis’s} son learns French.

   ‘John criticized his mother.’

   b. Filiz-se e öv-dü.  
   ‘lit. Phylis, however, praised e.’
   = Phylis praised {John’s / Phylis’s} mother.
Property #2: Extraction out of elided arguments is basically allowed.

► Saito (2007) and Shinohara (2006) observe that scrambling out of elided arguments is impermissible.

(7) a. Hanako-wa [CP Taroo-ga kono biru kara detekita to] itta. Hanako-TOP Taroo-NOM this building from came.out that said ‘Hanako said that Taroo came out of this building.’

b. Yumi-mo e itta. Yumi-also said ‘lit. Yumi said e, too.’

(8) a. Kono biru kara Hanako-wa [CP Taroo-ga t detekita to] itta. this building from Hanako-TOP Taroo-NOM bought that said ‘lit. From this building, Hanako said that Taroo came out.’

b.* Kono biru kara Yumi-mo e itta. this building from Yumi-also said ‘lit. From this building, Yumi said e, too.’

c. Kono biru kara Yumi-mo [CP Taroo-ga t detekita to] itta. this building from Yumi-also Taroo-NOM came.out that said ‘lit. From this building, Yumi said that Taroo came out, too.’

(9) a. Lady Gaga-ni Hanako-wa [CP Taroo-ga t ai-tagatteiru to] omotteiru. Lady Gaga-DAT Hanako-TOP Taroo-NOM see-want that think ‘lit. Lady Gaga, Hanako thinks that Taroo wants to see.’


► Though the badness of (8b) and (9b) is unquestionable, pure A’-movement out of elided arguments seems to be possible, as is pointed out by Nishigauchi and Fujii (2006).

(10) a. Taroo-ga sono biru kara detekita. Taroo-NOM that building from came.out ‘Taroo came out of that building.’

b. [CP Taroo-ga e detekita no]-wa sono biru kara desu. Taroo-NOM came.out that-TOP that building from be ‘lit. It was from that building that Taroo came out.’ ‘more lit. That Taroo came out was from that building.’

(11) the “null operator movement” analysis (Hoji (1989))

[CP OP1 [TP Taroo-ga t1 detekita ] no]-wa [sono biru kara]1 desu
‘[CP OP that [TP Taroo came out t1 ]] was [from that building]’

(12) the “focus movement + remnant movement” analysis (Hiraiwa and Ishihara (2012))

a.  [CP [TP Taroo-ga sono biru kara detekita] no] desu  
‘was [CP that [TP Taroo came out from that building ]]’

b.  [FocP [sono biru kara]1 [CP t’1 [TP Taroo-ga t1 detekita] no] desu]  
‘was [FocP [from that building]1 [CP t’1 that [TP Taroo came out t1 ]]]’

↑_________________________________________________|

↑___________________________________________________|

Hanako-TOP Taroo-NOM which building from came.out Q know  
‘Hanako knows from which building Taroo came out.’

b. Dono biru kara Hanako-wa [CP Taroo-ga t detekita ka] sitteiru.  
which building from Hanako-TOP Taroo-NOM came.out Q know  
‘lit. From which building, Hanako knows Taroo came out.’

c. * [Hanako-ga [CP Taroo-ga t detekita ka] sitteiru no]-wa dono  
Hanako-NOM Taroo-NOM came.out Q know that-TOP which  
biru kara desu.  
building from be  
‘lit. It was from which building that Hanako knows Taroo came out.’

► Pivots of cleft sentences can be associated with gaps that are deemed to be contained in elided arguments.

(14) a. Hanako-ga [CP Taroo-ga t detekita to] syoogensita no-wa kono  
Hanako-NOM Taroo-NOM came.out that testified that-TOP this  
biru kara desu.  
building from be  
‘It was from this building that Hanako testified that Taroo came out.’

b. Yumi-ga e syoogensita no-wa ano biru kara desu.  
Hanako-NOM testified that-TOP that building from be  
‘lit. It was from that building that Yumi testified e.’

= It was from that building that Yumi testified that Taroo came out.
(15) a. Hanako-ga \[\text{CP} \text{ Taroo-ga } t \text{ ai-tagatteiru to] omotteiru no-wa \]
Hanako-NOM Taroo-NOM see-want that think that-TOP
Lady Gaga-ni desu.
Lady Gaga-DAT be
‘It is Lady Gaga that Hanako thinks that Taroo wants to see.’

b. Yumi-ga e omotteiru no-wa Madonna-ni desu.
Hanako-NOM think that-TOP Madonna-DAT be
‘lit. It is Madonna that Yumi thinks e.’
= It is Madonna that Yumi thinks that Taroo wants to see.

(16) a. it was from this building that Hanako testified \[\text{CP that Taroo came out} t \]

b. it was from that building that Yumi testified \[\text{CP that Taroo came out} t \]

(17) a. it is Lady Gaga that Hanako thinks \[\text{CP that Taroo wants to see} t \]

b. it is Madonna that Yumi thinks \[\text{CP that Taroo wants to see} t \]

2.2. Saito’s (2007) Copying Analysis

Following Williams (1977) and especially Shinohara (2006), Saito (2007) assumes that argument ellipsis involves copying.

(18) (for (1))

a. Taroo respects self’s teacher  

b. Hanako despises self’s teacher

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Saito (2007) assumes that copying applies to “LF objects,” that is, elements “that syntax transfers to semantics.”

Suppose we have argument ellipsis in a language where subjects and objects enter into Agree relation with functional heads such as T and v.

(19) a. * John respects his teacher, but Bill despises e.

b. * John thinks his teacher speaks English, while Mary thinks e speaks French.

(20) a. \[TP \text{John } [T’ T [vP t\text{John }[v’ v_{[\phi]} [VP respects [DP his teacher ]_{[\phi, Case]} ]]]]]

b. \[TP \text{Bill } [T’ T [vP t\text{Bill }[v’ v_{[\phi]} [VP despises [DP ___ ]]]]]

b’. * \[TP \text{Bill } [T’ T [vP t\text{Bill }[v’ v_{[\phi]} [VP despises [DP his teacher ]_{[\phi, Case]} ]]]]]

⇒ the \(\phi\)-features of \(v\) in the elliptic sentence cannot be checked, because the copied object has already had its Case-feature checked prior to copying (unchecked Case-features make DPs active for Agree (Chomsky (2000))).
(21) a. \[
[\text{CP} \ {\text{TP}} \ \{[\text{vP} \ \{\text{his teacher} \} \ \{\text{Case} \} \ [v \ \{\text{vP} \ \{\text{speaks English} \} \}]]] \\
\text{<Agree>}
\]

a’. \[
[\text{CP} \ {\text{TP}} \ \{\text{his teacher} \} \ \{\text{Case} \} \ [T' \ {T} \ \{\text{vP} \ \{\text{speaks English} \} \}]] \\
\uparrow \text{<EPP-driven movement>}
\]

b. \[
[\text{CP} \ {\text{TP}} \ \{[\text{vP} \ \{\text{his teacher} \} \ \{\text{Case} \} \ [v \ \{\text{vP} \ \{\text{speaks French} \} \}]]] \\
\Rightarrow \text{the } \varphi \text{-features of } T \text{ in the elliptic sentence cannot be checked, because the copied subject has already had its Case-feature checked prior to copying.}
\]

Argument ellipsis, understood in terms of copying, should be restricted to languages where functional heads such as T and v lack \( \varphi \)-features. Hence, property #1 is explained.

Coupled with the assumption that scrambling is undone at LF (Saito (1989)), the copying analysis accounts for the impossibility of scrambling out of elided arguments.

(22) (for (9))

a. Lady Gaga, Hanako thinks \[\text{CP that Taroo wants to see } t \].

b. * Madonna, Yumi thinks \( e \).

(23) a. Lady Gaga, Hanako thinks \[\text{CP that Taroo wants to see } t \]

a’. Hanako thinks \[\text{CP that Taroo wants to see Lady Gaga} \]

b. Madonna, Yumi thinks __

b’. * Madonna, Yumi thinks \[\text{CP that Taroo wants to see Lady Gaga} \]

What would the copying analysis say about the possibility of pure A’-movement out of elided arguments?

(24) (for (15))

a. It is Lady Gaga that Hanako thinks that Taroo wants to see.

b. It is Madonna that Yumi thinks \( e \).

(25) a. it is Lady Gaga \( x \) that Hanako thinks \[\text{CP that Taroo wants to see } x \]

b. it is Madonna, that Yumi thinks \[\text{CP that Taroo wants to see } x \]

2.3. Bringing the Copying Analysis into Question

Is copying counter-cyclic?

Yes, if copying were to apply after the full structure of an elliptic sentence is constructed. (See Oku (1998).)
(26) a. Taroo respects self’s teacher
   
   b. \[ TP \text{ Hanako } [T' \text{ T } [vP \text{ tHanako } [v' \text{ v } [VP \text{ despises } ]]]]] \]
   
   b’. \[ TP \text{ Hanako } [T' \text{ T } [vP \text{ tHanako } [v' \text{ v } [VP \text{ despises self's teacher } ]]]]] \]

   ▶ Saito (2007) notes in a different context that overt and covert operations are interwoven (Bobaljik (1995) and Nissenbaum (2000)). This helps avoid the problem above.

(27) a. Taroo respects self’s teacher
   
   b. \[ [vP \text{ despises self's teacher } ] \]
   
   b’. \[ TP \text{ Hanako } [T' \text{ T } [vP \text{ tHanako } [v' \text{ v } [VP \text{ despises self's teacher } ]]]]] \]

   ▶ Note that the copied object in (27b) is an “LF object,” deprived of its phonetic/phonological features, so that it is not pronounced.

☞ But still this is a departure from the theory according to which in constructing the derivation of a sentence, one can only access to the Numeration, which consists of lexical items taken from the Lexicon, or the structure of the sentence already built. The copying analysis would allow access to the derivation or the output of another sentence.

☞ One might wonder what is wrong with this. If that were allowed, one should in principle be able to copy something contained in a already Spelled-Out domain and merge it with a larger structure containing the domain (by internal Merge!), violating the Phase Impenetrability Condition.

▶ The anti-agreement property can be taken to mean that elided arguments cannot participate in Agree relation. Is this shared with other ellipsis phenomena?

(28) a. Are there many books in the library?
   
   b. Yes, there are e.
   
   c. \[ TP \text{ there } [T' [T \text{-are } ] [vP \text{ tare many books in the library }]] ] \]

(29) a. \[ CP C [TP \text{ there } [T' [T \text{-are } ] [vP \text{ tare many books }_{\{\phi, \text{Case}\}} \text{ in the library }]] ] ] \]
   
   b. * \[ TP \text{ there } [T' [T \text{-are } ] [vP \text{ tare many books }_{\{\phi, \text{Case}\}} \text{ in the library }]] ] \]

▶ It would in principle be possible to treat argument ellipsis and VP-ellipsis differently, say, by analyzing the former in terms of copying while assuming the latter to involve deletion (Shinohara (2006)).

☞ But this seems to be a bifurcation of an apparently single phenomenon (ellipsis).

▶ Note that A’-extraction out of elided arguments is possible, just as comparable movement is allowed out of elided VPs.

(30) a. I know which book Max read, and which book Oscar didn’t.
   
   b. I know which book Max thinks Mary read, and which book Bill doesn’t.
   
   (Fiengo and May (1994))
3. A Deletion Analysis

3.1. Derivational Ellipsis

Aelbrecht (2009) proposes that ellipsis, understood as deletion, take place derivationally (derivational ellipsis).

(31) a. Ellipsis involves elided constituents and their licensors (licensing heads).
   b. When a constituent is elided (or more precisely, marked for ellipsis), it becomes syntactically inert just like the complement of a phase head.
   c. Ellipsis (or ellipsis-marking) of a constituent takes place when its licensor is introduced into the derivation.

(32) a. VP-ellipsis in English is analyzed as ellipsis of vP licensed by T, with AspectP and VoiceP intervening between them.

   b. 
      \[
      \begin{array}{c}
      \text{TP} \\
      \text{Spec} \ T' \\
      (\text{licensor ⇒ T} \ AspP) \\
      \text{Asp} \ \text{VoiceP} \\
      \text{Spec} \ \text{Voice'} \\
      \text{Voice} \ vP (⇐ elided) \\
      \text{SUB} \ v' \\
      v \ VP \\
      V \ OBJ
      \end{array}
      \]

(33) a. Modal Complement Ellipsis (MCE) in Dutch allows A-extraction, but not A’-extraction.
   b. Modal verbs take TP as their complement, with the TP containing AspectP, VoiceP, vP, and VP in hierarchically descending order.
   c. MCE involves ellipsis of AspectP (or VoiceP in the absence of AspectP) licensed by a modal head.

(34) a. Die broek moet nog niet gewassen worden, those pants must still not washed become maar hij mag al wel [gewassen worden], but they may already PRT washed become ‘Those pants don’t have to be washed yet, but they can be.’
b. * Ik weet niet wie Thomas moet uitnodigen,
maar ik weet wel wie hij niet mag.
‘I don’t know who Thomas has to invite, but I do know who he isn’t allowed to.’

(35)

\[ \text{CP} \]
\[ / \]
\[ \text{C} \quad \text{TP} \]
\[ / \]
\[ \text{Spec} \quad \text{T'} \]
\[ / \]
\[ \text{T} \quad \text{ModalP} \]
\[ / \]
\[ \text{(licensor \(\Rightarrow\) Modal) \quad \text{TP} \}
\[ / \]
\[ \text{Spec} \quad \text{T'} \]
\[ / \]
\[ \text{T} \quad \text{AspP (\(\Leftarrow\) elided)} \]
\[ / \]
\[ \text{Asp} \quad \text{VoiceP} \]
\[ / \]
\[ \text{Spec} \quad \text{Voice'} \]
\[ / \]
\[ \text{Voice} \quad \text{vP} \]
\[ / \]
\[ \text{SUB} \quad \text{v'} \]
\[ / \]
\[ \text{v} \quad \text{VP} \]
\[ / \]
\[ \text{V} \quad \text{OBJ} \]

3.2. Proposal

► In the case of argument ellipsis, the elided constituent is an argument and its licensor should be the head that assigns a \(\theta\)-role to it.

(36)

\[ \text{<object ellipsis>} \]
\[ \text{VP} \]
\[ / \]
\[ \text{V} \quad \text{DP (\(\Leftarrow\) elided)} \]
\[ / \]
\[ \text{(licensor \(\Rightarrow\) V)} \]

\[ \text{<internal argument ellipsis>} \]
\[ \text{VP} \]
\[ / \]
\[ \text{V} \quad \text{XP (DP/CP/PP)} \]
3.3. Explaining the Properties of Argument Ellipsis

**Property #1 (anti-agreement)**

- Suppose an elided object were to enter into Agree relation with \( v \).

\[
\begin{align*}
(38) \quad &a. \quad \text{VP} & b. \quad \text{vP} \\
& / \quad / \quad / \quad / \quad / \quad / \\
& V \quad \text{DP}_{[\phi, \text{Case}]} & v_{[\phi]} \quad \text{VP} \\
& / \quad / \quad / \quad / \\
& V \quad \text{DP}_{[\phi, \text{Case}]} \\
\end{align*}
\]

- The object DP is marked for ellipsis and hence becomes inert at the stage where (38a) is constructed. When \( v \) is introduced and merged with VP as in (38b), it cannot locate the \( \phi \)-features of the object.

- In a similar fashion, T should not be able to agree with an elided subject.

\[
\begin{align*}
(39) \quad &a. \quad \text{vP} & b. \quad \text{TP} \\
& / \quad / \quad / \quad / \quad / \quad / \\
& \text{DP}_{[\phi, \text{Case}]} \quad v' \quad \text{Spec} \quad T' \\
& / \quad / \quad / \quad / \\
& v \quad \text{VP} & T_{[\phi]} \quad \text{vP} \\
& / \quad / \quad / \quad / \\
& \text{DP}_{[\phi, \text{Case}]} \quad v' \\
& / \quad / \\
& v \quad \text{VP} \\
\end{align*}
\]

**Property #2 (extractability)**

- How can A’-movement be allowed out of elided complement clauses?

\[
\begin{align*}
(40) \quad &a. \quad \text{CP} & b. \quad \text{VP} & c. \quad \text{VP} \\
& / \quad / \quad / \quad / \quad / \quad / \\
& \alpha \quad \text{C’} & V \quad \text{CP} & \alpha \quad \text{VP} \\
& / \quad / \quad / \quad / \quad / \quad / \\
& C \quad \text{TP} & \alpha \quad \text{C’} & V \quad \text{CP} \\
& / \quad / \quad / \quad / \quad / \quad / \\
& C \quad \text{TP} & t_{a} \quad \text{C’} \\
& / \quad / \quad / \quad / \\
& C \quad \text{TP} \\
\end{align*}
\]
Any operation in relation to V can take place in (40b): movement of α, which may be either adjunction to VP or substitution into the specifier position of VP, driven by the edge feature of V, and ellipsis marking of CP can take place simultaneously. (40c) is derived directly from (40b), allowing α to escape from the elided CP.

4. One More Thing

► Cases like (1), repeated below as (41), are ambiguous between strict and sloppy interpretation. Can the strict reading be accounted for by the copying analysis?

(41) a. Taroo-wa zibun-no sensei-o sonkeisiteiru.
    Taroo-TOP self-GEN teacher-ACC respect
    ‘lit. Taroo respects self’s teacher.’

    b. Hanako-wa e keibetusiteiru.
       Hanako-TOP despise
       ‘lit. Hanako despises e.’
       = Hanako despises Taroo’s teacher. / Hanako despises her own teacher.

    c. Hanako-wa zibun-no sensei-o keibetusiteiru.
       Hanako-TOP self-GEN teacher-ACC despise

► Similarly, cases like (42b) are ambiguous between definite (or E-type) and quantificational interpretation (Oku (1998) and Takahashi (2008b). Can the definite reading be handled by the copying analysis?

(42) a. Taroo-wa sannin-no sensei-o sonkeisiteiru.
    Taroo-TOP three-GEN teacher-ACC respect
    ‘lit. Taroo respects three teachers.’

    b. Hanako-mo e sonkeisiteiru.
       Hanako-also respect
       ‘lit. Hanako respects e, too.’
       = Hanako respects the three teachers. / Hanako respects three teachers.

(43) a. Taroo respects three teachers

    b. Hanako respects three teachers

    c. Hanako respects the three teachers

► Oku (1998) and Takahashi (2008a), among others, assume that null arguments in Japanese are ambiguous between pro and ellipsis, with the former responsible for the strict and definite interpretation in question.

(44) a. Taroo respects self’s teacher₁.

    b. Hanako despises pro₁.

(45) a. Taroo respects three teachers₁.
b. Hanako also respects $pro_1$.

► Now that null arguments can arise through ellipsis in Japanese, do we still need to assume $pro$ in the language?

► Japanese does have overt pronouns.

(46) a. Taroo-wa zibun-no sensei-o sonkeisiteiru.
Taroo-TOP self-GEN teacher-ACC respect
‘lit. Taroo respects self’s teacher.’

b. Hanako-wa $kare-o$ keibetusiteiru.
Hanako-TOP him-ACC despise
‘lit. Hanako despises him.’

(47) a. Taroo-wa sannin-no sensei-o sonkeisiteiru.
Taroo-TOP three-GEN teacher-ACC respect
‘lit. Taroo respects three teachers.’

b. Hanako-mo $karera-o$ sonkeisiteiru.
Hanako-also them-ACC respect
‘lit. Hanako respects them, too.’

☞ Deletion of the pronouns yields the versions of (41b) and (42b) that have the strict and the definite reading, respectively.

(48) a. Taroo-wa zibun-no sensei-o sonkeisiteiru
Taroo-TOP self-GEN teacher-ACC respect

b. Hanako-wa $kare-o$ keibetusiteiru
Hanako-TOP him-ACC despise

(49) a. Taroo-wa sannin-no sensei-o sonkeisiteiru
Taroo-TOP three-GEN teacher-ACC respect

b. Hanako-mo $karera-o$ sonkeisiteiru
Hanako-also them-ACC respect

► Is the kind of deletion indicated above (namely, deletion of pronouns with full nominal antecedents) permissible?

☞ Yes, it falls under the rubric of vehicle change (Fiengo and May (1994)).

(50) a. Mary loves John$_1$, and he$_1$ thinks Susan does, too.

b. Mary loves John$_1$, and he$_1$ thinks Susan does [$VP$ love *John$_1$ / him$_1$ ], too.
5. Conclusion

- I have proposed to analyze argument ellipsis in terms of deletion, which helps avoid some of the problems with the copying analysis.

- Adoption of the derivational analysis of deletion makes it possible to account for the inability of elided arguments to participate in agreement while allowing A’-extraction out of them.

- The deletion analysis may help us dispense with pro in Japanese, though many details remain to be worked out, such as how to handle seemingly antecedent-free null arguments.

References


