Null Arguments in EA Languages Revisited

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Abstract

The main question this paper addresses is what makes argument ellipsis in Japanese (and Korean) possible. It first presents evidence for the LF copying analysis of the phenomenon. Then, it proposes that Japanese allows ellipsis of all sorts of arguments due to two factors. The first is the absence of j-feature agreement. A DP antecedent copied into an ellipsis site at LF lacks unvalued features and cannot participate in j-feature agreement because of the activation condition. Therefore, the absence of j-feature agreement is a prerequisite for argument ellipsis. The second factor is the presence of suffixal Cases and predicate inflections as weak heads that are unable to provide labels. One of the crucial assumptions in this paper is Norvin Richards' hypothesis that ellipsis sites count as heads in syntactic structure. It is shown that it makes structures with elided arguments unlabeled in many languages. For example, the straightforward structure with an elided complement would be {H, H}. Then, it is argued that Case markers and predicate inflections as weak heads enable the structures with elided arguments to be properly labeled. Finally, some languages that allow object ellipsis but not subject ellipsis are considered. Chinese, for example, lacks not only j-feature agreement but also Case markers, and allows object ellipsis. It is suggested that Case feature sharing makes the labeling of {H, H} structure possible in this case.

Keywords: Argument ellipsis, East Asian languages, LF copying, j-feature agreement, labeling, weak head, Case feature sharing

1. Introduction

Argument ellipsis has been one of the major topics in syntax. Null arguments are observed extensively in Japanese and Korean, and discourse *pro* was assumed to be responsible for this. However, Oku (1998) and Kim (1999) argued that these languages also allow arguments to be elided. Oku extended Otani and Whitman's (1991) observation on null objects and showed that null arguments in Japanese generally allow sloppy interpretation with proper antecedents. Sloppy interpretation is possible in (1b) in contrast with (1c), which contains a pronoun.

(1) a. Taroo-wa itumo zibun-no hakaseronbun-o inyoosu-ru.
Taroo-TOP always self-GEN dissertation-ACC cite-Pres.
'Taroo always cites his Ph.D. dissertation.'

b. Demo, Ziroo-wa zenzen [*e*] inyoosi-na-i.
but Ziroo-TOP at.all cite-not-Pres.
'But Ziroo doesn't cite (his Ph.D. dissertation) at all.' ... sloppy or strict interpretation

c. Demo, Ziroo-wa zenzen sore-o inyoosi-na-i.
but Ziroo-TOP at.all it-ACC cite-not-Pres.
'But Ziroo doesn't cite it at all.' … strict interpretation only

This is expected if the object of (1b) is identical to the object of (1a) but is elided.

Takahashi (2008), among others, added a piece of evidence for this argument ellipsis hypothesis. The second sentence in (2a) can simply mean that five or more students went to Delhi and the students need not be those who went to Taipei. The reading is missing in (2b) with an overt pronoun.

(2) a. Go-nin-izyoo-no gakusei-ga Taipei-ni it-ta. [*e*] Derii-ni-mo it-ta.
5-Cl-or.more-GEN student-NOM Taipei-to go-Past Delhi-to-also go-Past
'Five or more students went to Taipei. (Five or more students/they) went to Delhi, too.'

b. Go-nin-izyoo-no gakusei-ga Taipei-ni it-ta. Karera-wa Derii-ni-mo it-ta.
5-Cl-or.more-GEN student-NOM Taipei-to go-Past they-TOP Delhi-to-also go-Past
'Five or more students went to Taipei. They went to Delhi, too.'

This reading of (2a), which Takahashi calls 'quantificational reading', is also expected if the subject of the second sentence is identical to that of the first and is elided.

In this paper, I present a hypothesis on why Japanese (and Korean) allow argument ellipsis, a question that has been persued since Oku (1998). The hypothesis is that it is due to two factors; the absence of j-feature agreement and the presence of Case as a weak head. The latter, I argue, allows structures with elided arguments to be properly labeled. I assume the LF copying analysis of ellipsis, as opposed to the PF deletion analysis, throughout this paper. I briefly outline the reason for this assumption in the following section. Then, I show that DP argument ellipsis can be explained by the absence of j-feature agreement but the analysis falls short of explaining why CP and PP argument ellipsis, which is observed in Japanese and Korean, is disallowed in j-feature agreement languages. In Section 3, I present the second proposal to solve this problem. I adopt the hypothesis of Richards (2003) that elided constituents count as heads in the syntax, and argue that this, together with the labeling algorithm, explains the distribution of argument ellipsis more generally. Finally in Section 4, I consider null arguments in some other languages, including Malayalam and Chinese, and speculate on how to extend the analysis to them. The suggestion to be made there is that Case feature sharing, in addition to j-feature sharing, makes the labeling of {XP, YP} structure possible. Section 5 concludes the paper.

2. Argument Ellipsis and j-feature Agreement

Oku (1998) was the first work to present an LF copying analysis of argument ellipsis. In Section 2.1, I present Shinohara's (2006) argument for the analysis. Then, I show in Section 2.2 that the activation condition for j-feature agreement, proposed in Chomsky (1995), predicts that argument ellipsis is possible only in the absence of j-feature agreement.

2.1. LF Copying or PF Deletion

Shinohara (2006) observes that CP ellipsis exhibits an interesting pattern when an argument is scrambled out of the CP. (3) shows that a complement CP can be elided.

(3) Hanako-wa [$_{CP}$ zibun-no teian-ga saiyoos-are-ru to] omot-te i-ru ga,
Hanako-TOP self-GEN proposal-NOM adopt-Passive-Pres. C think-Pres. though
Taroo-wa [$_{CP}$ *e*] omot-te i-na-i.
Taroo-TOP think-not-Pres.

'Though Hanako thinks that her proposal will be accepted, Taroo doesn't think (that it/his proposal will be accepted).'

As indicated in the translation, sloppy interpretation is possible in this example. However, a striking contrast is observed when a constituent is scrambled out of the antecedent CP as in (4).

(4) [Sono hon-o [Taroo-wa [$_{CP}$[$_{TP}$ Hanako-ga _ kat-ta] to] it-ta]].
that book-ACC Taroo-TOP Hanako-NOM buy-Past C say-Past
'That book, Taroo said that Hanako bought.'
a. Sono hon-o [Ziroo-mo *([$_{CP}$[$_{TP}$ Hanako-ga _ kat-ta] to]) it-ta].
that book-ACC Ziroo-also Hanako-NOM buy-Past C say-Past
'That book, Ziroo also said *(that Hanako bought).'
b. [Ziroo-mo ([$_{CP}$[$_{TP}$ Hanako-ga sono hon-o kat-ta] to]) it-ta].
Ziroo-also Hanako-NOM that book-ACC buy-Past C say-Past
'Ziroo also said (that Hanako bought the book).'

(4a) with the same scrambling does not allow CP ellipsis whereas (4b) with no scrambling does. This, Shinohara points out, is unexpected under the PF deletion analysis. The elided CP is identical to its antecedent in the ungrammatical (4a) and it is not in the grammatical (4b).

Then, Shinohara argues that the LF copying analysis correctly predicts the contrast in (4). It is shown in Saito (1989) that a phrase scrambled out of a CP can be reconstructed to a position within the CP at LF. Oka (1991) follows up on this and demonstrates that the reconstruction is obligatory. Given this, the embedded CP in (4) is as in (5) at LF.

(5) α: [$_{CP}$[$_{TP}$ Hanako-ga sono hon-o kat-ta] to]
Hanako-NOM that book-ACC buy-Past C

If a is copied into the ellipsis site in (4a) at LF, this yields the illicit (6a) with two instances of *sono hon-o* 'that book-ACC'.

(6) a. *Sono hon-o [Ziroo-mo a it-ta] ….. after LF copying in (4a)
that book-ACC Ziroo-also say-Past
b. [Ziroo-mo a it-ta] ….. after LF copying in (4b)
Ziroo-also say-Past

On the other hand, the grammatical structure in (6b) obtains with the LF copying of a into the ellipsis site of (4b). I follow Shinohara and assume the LF copying analysis in the subsequent discussion.[1]

As pointed out in Saito (2017a), the LF copying analysis successfully explains the non-applicability of argument ellipsis to wh-phrases shown in (7).

(7) a. Taroo-wa dare-ni at-ta no ka.
Taroo-TOP who-DAT meet-Past C Q
'Who did Taroo meet?' = 'Taroo met who?'
b. Sosite, Hanako-wa *(dare-ni) at-ta no ka.
and Hanako-TOP who-DAT meet-Past C Q
'And, who did Hanako meet?' = 'And Hanako met (who)?'

Suppose that Japanese wh-phrases in situ are subject to covert operator movement, as argued in Huang (1982) and more recently in Saito (2017b). Then, the LF of (7a) is roughly as in (8a), which I assume is derived with copy and deletion as in (8b).

(8) a. [Which x: x a person] Taroo met x
b. {[which x: x a person], ~~x~~} Taroo met {~~[which x: x a person]~~, x}

The LF copying of the operator '[which x: x a person]' and that of the variable 'x' into the ellipsis site in (7b) both result in semantic deviance. The object position will be occupied by an operator in the former case as in (9a) and by a free variable in the latter as in (9b).

(9) a. Hanako met [which x: x a person]
b. Hanako met x

This analysis extends to the non-applicability of argument ellipsis to DPs that are interpreted as generalized quantifiers, a phenomenon observed by Hoji (1998) and Tomioka (2016), among others. Tomioka's example is shown in (10).

(10) a. Kyonen-no siken-de-wa 30%-miman-no gakusei-ga ukat-ta.
last.year-GEN exam-in-TOP 30%-less.than-GEN student-NOM pass-Past
'In last year's exam, less than 30% of the students passed.'
b. Kotosi-no siken-de-mo *(30%-miman-no gakusei-ga) ukat-ta.
This.year-GEN exam-in-also 30%-less.than-GEN student-NOM pass-Past
'In this year's exam also, (less than 30% of the students) passed.'

If *30%-miman-no gakusei* '30%-less.than-GEN student' (less than 30% of the students) in (10a) is raised by QR, then LF copying into (10b) fails for the same reason as the case of (7b).

The proposal here implies that *go-nin-izyoo-no gakusei* '5-Cl-or.more-GEN student' (five or more students) in (2) need not be raised by QR. This receives independent support from Constant (2012). He shows that more determiners allow DPs to receive e-type interpretation than generally assumed. More specifically, he proposes that DPs with witnessable determiners can be interpreted as e-type. 'Witnessable' is defined as in (11).

(11) A determiner Det is *witnessable* iff Det (P) (Q) $\exists$x [P (x) & Q (x)]

Witnessable determiners include not only those in (12a) but also the ones in (12b).

(12) a. some, a , three, several, many, a few … witnessable
b. most, all, more than 3, at least 3, exactly 3, half … witnessable
c. few, no, less than 3, not many … non-witnessable

All the examples of null arguments that Takahashi (2008) cites for quantificational reading have antecedents that allow e-type interpretation, according to this criterion. Then, they are not, or at least need not be interpreted as generalized quantifiers that are subject to QR.

2.2. The Activation Condition as a Constraint on Argument Ellipsis

As noted at the outset of this paper, the licensing condition for argument ellipsis has been explored since Oku (1998). In this section, I introduce the proposal in Saito (2007) that j-feature agreement blocks argument ellipsis, and discuss its advantages as well as its limitations.

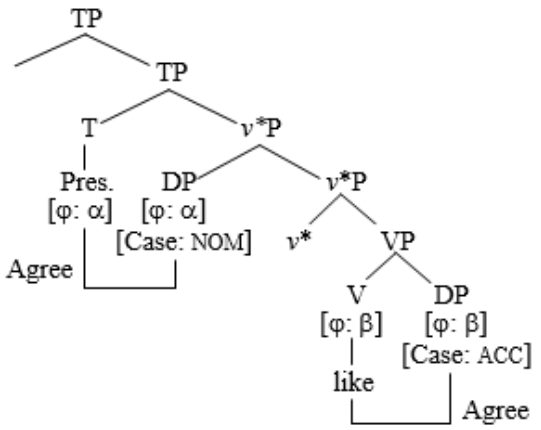
Chomsky (1995) proposes that j-feature agreement is accomplished by the operation Agree and further that Agree is constrained by the activation condition in (13).

(13) Activation Condition: a and b Agree only if both carry unvalued features.

(14b) illustrates how Agree takes place in the transitive sentence in (14a).

(14) a. He likes them.

b.



T with unvalued j-features searches its domain and agrees with the DP in Spec, *v**P. The j-features are valued by the DP and the Case feature of the DP is valued as nominative through this Agree relation. The transitive V agrees with the object DP in the same way. The activation condition states that Agree is possible only between two elements with unvalued features. As discussed in detail in Chomsky (1986), a DP with valued Case feature cannot participate in Agree. Thus, the matrix T fails to have its j-features valued in (15c).

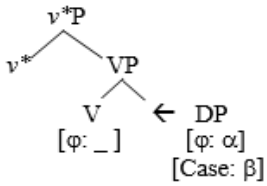
(15) a. It seems to John [that Mary is qualified].
b. Mary seems to John [_ to be qualified].
c. *John seems to _ [that Mary is qualified].

The activation condition accounts for why argument DPs cannot be elided, for example, in English. Let us consider the concrete example in (16).

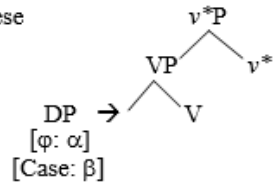
(16) a. John always cites [$_{DP}$ his dissertation].
b. *But Bill doesn't cite [*e*].

The antecedent DP should be copied into the ellipsis site in (16b), as shown in (17a).

(17) a. English



b. Japanese



The Case feature of the copied DP is already valued. Thus, the transitive V cannot agree with the DP and the j-features of the V fail to be valued. This problem does not arise in Japanese as the language lacks j-feature agreement altogether. A transitive V does not accompany unvalued j-features and hence, LF copying of the antecedent DP with valued Case feature is not problematic.

The analysis outlined above successfully accounts for why DP argument ellipsis is possible in Japanese and not in English. However, as noted in Saito (2007), it fails to explain why argument CPs and PPs cannot be elided in English. (18b) and (19b) are both ungrammatical.

(18) a. Mary thinks [$_{CP}$ that [$_{TP}$ her proposal will be accepted]].
b. *But, John doesn't think [$_{CP}$ *e*].

(19) a. Mary lives in her parents' house.
b. *But John doesn't live [$_{PP}$ *e*].

On the other hand, Japanese allows CP ellipsis as in (3) and also PP ellipsis as shown in (20).

(20) a. Hanako-wa [$_{PP}$ zibun-no oya-no ie-ni] sun-de i-ru.
Hanako-TOP self-GEN parent-GEN house-in live-Pres.
'Hanako lives in her parents' house.'
b. Demo, Taroo-wa [$_{PP}$ *e*] sun-de i-na-i.
but Taroo-TOP live-not-Pres.
'But Taroo doesn't live in his parents' house.'

If CP and PP complements do not participate in j-feature agreement in English, this difference between English and Japanese remains to be explained.

3. Labeling and the Distribution of Ellipsis

In this section, I present an analysis based on the labeling mechanism to solve the problem with CP and PP ellipsis just noted. I first briefly go over the labeling algorithm proposed in Chomsky (2013, 2015) and the hypothesis on its application to Japanese suggested in Saito (2016, 2018). Then, I adopt Richards' (2003) proposal that ellipsis sites count as heads in the syntax and argue that the distribution of argument ellipsis can be explained in terms of labeling.

3.1. Labeling in English and Japanese

3.1.1. Chomsky's (2013, 2015) Labeling Algorithm

Merge, the only structure-building operation, takes two elements, α and β, and forms the constituent γ = {α, β}. Chomsky (2013) notes that the interpretive components require information on the nature of γ. For example, if γ combines a nominal element and a verbal element, information on whether γ is a noun phrase or a verb phrase is important. Chomsky

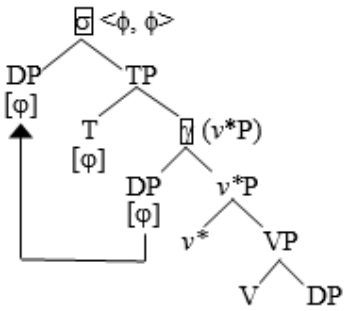
proposes a labeling algorithm that reads off the nature (label) of a constituent formed by Merge. He considers the three cases of Merge in (21).

(21) a. γ = {X, YP} … H is the label of γ. (E.g., {V, DP} = VP)
b. γ = {XP, YP} … ?
c. γ = {X, Y} … ?

In (20a), Merge combines a head and a phrase. In this case, search into γ finds a unique head X. Then, it can be assumed that X is the label of γ. As the label of γ in (21b, c) cannot be determined in this manner, these structures are in principle excluded.

However, the {XP, YP} structure in (21b) are observed in examples such as (22a).

(22) b.



The structure is formed as {V, DP}, {*v**, VP} from the bottom. When the external argument is merged, γ = {DP, *v**P} is constructed. However, after T is merged, DP moves and merges with TP as indicated by the arrow. Chomsky hypothesizes that γ inherits the label of *v**P as it is the only element that g fully contains. The movement of DP forms σ = {DP, TP}. Chomsky then proposes that s is labeled as <φ, φ> as the D head and T share j-features because of agreement. The labeling algorithm of Chomsky (2013) is summarized in (23).

(23) a. γ = {H, αP} ... The label of γ is H.
b. γ = {αP, βP} ... (i) The label of γ is the label of αP if βP moves out of γ.
(ii) The label of γ is <F, F> if α and β share a major feature F.

This explains also why wh-movement terminates at the edge of question CP, as in (24).[2]

(24) [$_{\gamma}$ Who [$_{CP}$ does [$_{TP}$ John think [$_{\delta}$ _ [$_{CP}$ that [$_{TP}$ Mary saw _]]]]]]

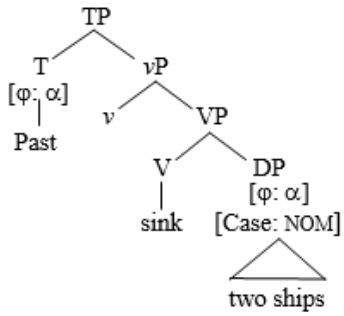
The wh-phrase must move out of the specifier position of the embedded CP so that δ can be labeled. As it shares the Q(uestion) feature with the matrix C, γ is labeled <Q, Q>.

Although (23) explains the distribution of noun phrases and the properties of movement to a large extent, Chomsky (2015) tries to extend its empirical coverage further. One of the proposals there is to derive the EPP from the labeling theory. It is clear from the discussion of (22) why an external argument must move to the specifier position of the head it agrees with. But the same movement is obligatory also for the internal argument of an unaccusative verb, as shown in (25).

(25) a. *Sank two ships.
b. Two ships sank _ .

The ungrammatical (25a) has the structure in (26), and Chomsky assumes that it is indeed allowed in Italian as (27) is grammatical.

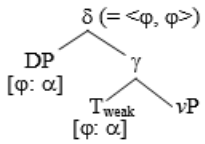
(26)



(27) Affondarono due navi. (See Burzio (1986), for example.)
sank two ships
'Two ships sank.'

Given this, he proposes that T in English is a weak head that is unable to provide a label. Then, tensed clauses in the language must be labeled by φ-feature sharing as in (28).

(28)



Here, it is assumed that feature sharing makes T strong and γ is labeled by T.

3.1.2. Labeling in Japanese

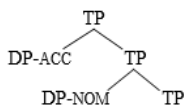
Chomsky's proposals outlined above raise an interesting problem for languages like Japanese that lack φ-feature agreement altogether. How are tensed clauses labeled in these languages? In Japanese, for example, arguments accompany suffixal Case and phrases with Case never project. Given this, it is proposed in Saito (2016) that Case in Japanese serves as an 'anti-labeling device' as in (29).

(29) Suffixal Case as an anti-labeling device: In γ = {α-Case, β}, β provides the label for γ.

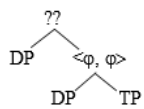
This, it is argued, not only allows tensed clauses to be labeled but explains notable properties of Japanese. For example, once (29) is assumed, (30a) with object scrambling is properly labeled as shown in (30b).

(30) a. Taroo-o Hanako-ga _ sikat-ta.
Taroo-ACC Hanako-NOM scold-Past
'Hanako scolded Taroo.'

b. Japanese



vs. English



Scrambling applies to adverbial phrases as well, as shown in (31).

(31) a. Taroo-wa sizuka-ni heya-o de-ta.
Taroo-TOP quietness-Cop. room-ACC leave-Past
'Taroo left the room quietly.'
b. Sizuka-ni Taroo-wa _ heya-o de-ta. (adverb scrambling)

The adverb in (31) contains the copula in preverbal form. The other forms are as in (32).

(32) a. Kono heya-wa sizuka-da. (conclusive)
this room-TOP quietness-Cop.Pres.
'This room is quiet.'
b. sizuka-na heya (prenominal)
quietness-Cop.Pres. room
'a quiet room'

Given this, it is proposed in Saito (2016) that predicate inflection serves as an anti-labeling device just like suffixal Case.

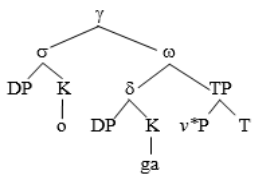
This analysis raises the question why Case and predicate inflection have this anti-labeling property. The problem is discussed in Saito (2018). It is proposed there that these elements are weak heads roughly in the sense of Chomsky (2015). As the analysis requires a little change in the function of weak heads, I turn to this first. Although Chomsky assumes that $\gamma = \{X, YP\}$ is not labeled if X is a weak head, I entertain the hypothesis that γ inherits the label of YP in this case. The proposal is stated more precisely in (33).

(33) Search into $\gamma = \{\alpha, \beta\}$ for a label. If a is a weak head or search into α finds a weak head, then the label of β is the label of γ.

This change does not affect Chomsky's explanation for the EPP. According to (33), the label of $\{T_{weak}, v\text{P}\}$ is *v*. The structure $[_{v\text{P}}\ T_{weak}\ v\text{P}]$ is ruled out as T appears within *v*P, which should represent the predicate-argument structure with the exclusion of tense.

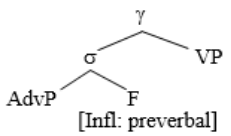
Let us now consider Case in Japanese. Following Travis and Lamontagne (1992) and Fukuda (1993), I assume that it is a K head. And if K is a weak head, its anti-labeling property follows from (33). Let us consider the scrambling example in (30a) to see how this works. Its structure is shown in (34).

(34)



δ and σ inherit the label of DP as K is a weak head. For w, search into d finds a weak head K. Hence, ω is labeled as T.[3] As search into s reaches a weak head K, γ inherits the label T from ω. Thus, (33) in effect makes K an anti-labeling devise. The anti-labeling property of predicate inflection follows in the same way if the inflection F is a weak head. The structure of the VP in (31a) is shown in (35).

(35)



σ inherits the label of AdvP as F is weak. For γ, search into σ finds F. Hence, γ is a VP. In the next section, I explore the possibility to account for the distribution of argument ellipsis based on this labeling mechanism.

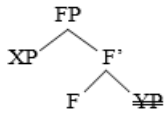
3.2. Labeling with Elided Constituents

I start the discussion with one of the crucial assumptions, i.e., (36) proposed by Richards (2003).

(36) Elided constituents are considered heads in syntactic structure.

Richards proposes (36) to explain the generalization in (37) in terms of Kayne's (1994) Linear Correspondence Axiom.

(37) Ellipsis: The complement of a functional category F (C, T, or D) can be elided only when F has a specifier, as illustrated below. (cf. Saito and Murasugi 1990, Lobeck 1990)



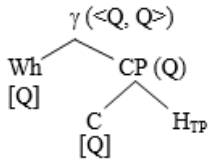
The generalization is for sluicing, VP ellipsis and NP ellipsis. It captures, for example, the contrast between (38) and (39) with sluicing.

(38) a. John bought something, but I don't know [$_{CP}$ what ([$_{TP}$ he bought])].
b. He knows [$_{CP}$ which girl [$_{TP}$ she saw]], but he doesn't know [$_{CP}$ which boy ([$_{TP}$ she saw])].

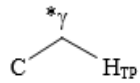
(39) a. John said he saw a unicorn, but I don't know [$_{CP}$ if *([$_{TP}$ he saw a unicorn])].
b. John denied that he cheated, but I believe [$_{CP}$ that *([$_{TP}$ he cheated])].

(36) makes it possible to explain this contrast in terms of labeling as well. The CPs with ellipsis in (39) have the structure in (40b).

(40) a.



b.



As γ is not labeled, the structure is ruled out. The CPs in (38), on the other hand, have the structure in (40a). In this case, γ is labeled as <Q, Q> with the Q-feature sharing between the wh-phrase and the interrogative C. This feature sharing, I assume, makes C the label provider for {C, H_{TP}} in a way analogous to the case in which j-feature sharing makes T_{weak} the label provider for {T_{weak}, $v^{(*)}$P}.

(36) also explains why argument ellipsis is generally disallowed in English. For example, an internal argument cannot be elided whether it is a DP, a CP or a PP, as illustrated in (41).

(41) *[$_{\gamma}$ V H_{XP}]

Thus, the problem with CP and PP ellipsis in English is solved. The remaining question to be discussed is whether this analysis is compatible with argument ellipsis in Japanese. If ellipsis in Japanese results in the same structure as (41), then it is incorrectly ruled out.

I suggest that what is elided in Japanese is not {DP, K} (or {XP, F}) but the complement of K (or F) as illustrated in (42).

(42) [$_{g}$ H_{DP} K]

As K is a weak head, g inherits the label of H_{DP} and no problem arises with labeling. There are two pieces of evidence for (42). First, discourse pro is assumed to accompany Case and if Case is realized on K, then it should be the complement of K as illustrated in (43).

(43) [$_{DP}$ pro K]

It seems then that K is not phonetically realized in {DP, K} if DP is not. Secondly, an elided argument requires an antecedent but need not agree in Case with its antecedent, as shown in (44).

(44) a. Taroo-wa [$_{DP}$ zibun-no hahaoya]-o tazune, Hanako-wa ([$_{DP}$ zibun-no hahaoya]-ni)
Taroo-TOP self-GEN mother-ACC visit Hanako-TOP self-GEN mother-DAT
denwa-o si-ta.
phone-ACC do-Past
'Taroo visited his mother, and Hanako called (her mother).'

b. Taroo-wa [$_{DP}$ zibun-no hahaoya]-ni at-ta ga, Hanako-wa
Taroo-TOP self-GEN mother-DAT meet-Past though Hanako-TOP
([$_{DP}$ zibun-no hahaoya]-o) oikaesi-ta.
self-GEN mother-ACC chase.away-Past
'Taroo met his mother, but Hanako chased her mother away.' (Saito 2007)

This is expected if argument ellipsis of DP applies to the DP complement of K.[4]

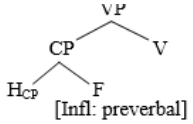
This analysis extends to CP and PP ellipsis. CPs and PPs can be scrambled and further, they are accompanied by genitive Case in noun phrases. Examples are shown for CP in (45).

(45) a. [$_{CP}$ Hanako-ga soko-ni i-ta to] Taroo-wa _ it-ta.
Hanako-NON there-at be-Past C Taroo-TOP say-Past
'Taroo said that Hanako was there.'

b. [$_{CP}$ Hanako-ga soko-ni i-ta to]-no hatugen
Hanano-NOM there-at be-Past C-GEN statement
'the statement that Hanako was there'

(45a) is explained if the CP is embedded under preverbal F, the counterpart of genitive Case in clausal context. Then, the structure for an elided complement CP is as in (46).

(46)



4. Possible Extension of the Analysis to Other Languages

According to the analysis in the preceding sections, Japanese allows argument ellipsis because it lacks φ-feature agreement and Case markers/predicate inflections are weak heads. Argument ellipsis is attested in a number of languages, and it would be interesting to see how the analysis can be developed so that it extends to them. In this section, I consider Turkish, Malayalam and Chinese, and suggest that not only φ-feature sharing but also Case feature sharing make the labeling of {XP, YP} structure possible.

Let us first consider Turkish and Malayalam. Şener and Takahashi (2010) show that Turkish allows objects, but not subjects, to be elided. Their data are given in (47) and (48).

(47) a. Can [*pro* anne-si]-ni eleştir-di.
John mother-3SG-ACC criticize-Past
'John criticized his mother.'
b. Mete-yse [*e*] öv-dü.
Mete-however praise-Past
'Mete, however, praised her/his mother.' (sloppy interpretation possible)

(48) a. Can [[*pro* öneri-si]-nin kabul ed-il-eceğ-i]-ni düşün-üyor.
John proposal-3SG-GEN accept do-Passive-NM-3SG-ACC think-Pres.
'John thinks that his proposal will be accepted.'
b. Aylin-se [[*e*] redded-il-eceğ-i]-ni düşün-üyor.
Eileen-however reject-Passive-NM-3SG-ACC think-Pres.
'Eileen, however, thinks that it will be rejected.' (sloppy interpretation impossible)

Şener and Takahashi argue that this state of affairs is expected under the hypothesis that j-feature agreement blocks argument ellipsis: Turkish exhibits subject agreement but not object agreement.

Malayalam is examined by Takahashi (2013) and shown to allow only object ellipsis just like Turkish. Relevant data are shown in (49)-(50).

(49) a. John tan-te bhaarya-ye sneehik'k'unnu.
John self-GEN wife-ACC love
'John loves his wife.'
b. pakSe Bill [*e*] weRukk'unnu.
But Bill hate
'But Bill hates his wife.' (sloppy interpretation possible)

(50) a. John paRaññu [ten-te makan Microsoft-il jooli ceyy'unnu ennə].
John said self-GEN son Microsoft-in job do C
'John said that his son was working at Microsoft.'
b. Bill paRaññu [[*e*] IBM-il jooli ceyy'unnu ennə].
Bill said IBM-in job do C
'Bill said that he (= Bill) was working at IBM.' (sloppy interpretation possible)

Malayalam is unique in the Dravidian family and lacks φ-feature agreement altogether.

Let us see how the proposals in the preceding sections fare with these two languages. First, I argued that object ellipsis is allowed under two conditions; the absence of φ-feature agreement and Case as a weak head. As both Turkish and Malayalam do not exhibit object agreement, the

first condition is satisfied. For the second condition, the object marker is *-ni* in Turkish and *-ye* in Malayalam. If they are weak heads, it explains the fact that the languages allow object ellipsis as well as object scrambling.[5] There is no Case marker for subjects in Malayalam and this explains why subjects cannot be elided. But the absence of subject Case marker in Malayalam raises a more fundamental question. How are tensed clauses with the structure {DP, TP} labeled if the language lacks both φ-feature agreement and suffixal Case on the subject?

Chinese, investigated by Takahashi (2014), Cheng (2013), and Li (2014), among others, raises a related question. Chinese, too, allows object ellipsis and not subject ellipsis, as shown (51)-(52).

(51) a. Zhangsan [yinwei wo jiao-guo ta de erzi] hen gaoxing.
Zhangsan because I taught-ASP his son very happy
'Zhangsan is happy because I have taught his son.'

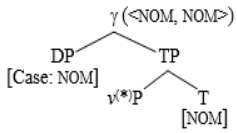
b. Lisi [yinwei wo mei jiao-guo (ta de erzi)] hen bu gaoxing.
Lisi because I not teach-ASP his son very not happy
'Lisi is not happy because I have not taught his son.' (sloppy interpretation possible)

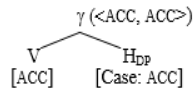
(52) a. Zhangsan [yinwei ziji de/ta de erzi jiao-guo shuxue] hen gaoxing.
Zhangsan because self's his son teach-ASP math very happy
'Zhangsan is happy because his son has taught math.'

b. Lisi [yinwei [*e*] jiao-guo yuyanxue] hen deyi.
Lisi because teach-ASP linguistics very proud
'Lisi is proud because he (= Lisi) has taught linguistics.' (sloppy interpretation impossible)

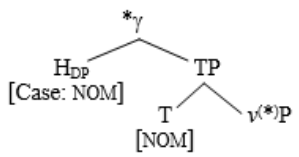
Chinese lacks both φ-feature agreement and suffixal Case. Yet, its tensed clauses are somehow labeled, and further, it allows object ellipsis.

The problems with Malayalam and Chinese both can be solved if labeling is possible through Case feature sharing. Under this hypothesis, Malayalam tensed clauses and Chinese VP with object ellipsis are labeled as in (53a) and (53b) respectively.[6, 7]

(53) a.


b.


As T values the Case feature of DP as NOM in (53a), it can be assumed that they share the Case feature NOM and g is labeled as <NOM, NOM>. Similarly, if the transitive V can (re)value the Case feature of the LF-copied object as ACC in (53b), γ is labeled as <ACC, ACC>. Subject ellipsis in these languages is ruled out if labeling by feature sharing is confined to {XP, YP} structure as in (53a) and {X, Y} structure as in (53b), that is, labeling by the head has priority in {X, YP} structure. This is illustrated in (54).

(54)


As the elided subject in (54) is considered a head, γ is incorrectly labeled as DP.

Labeling by Case feature sharing just suggested solves an independent problem, i.e., it accounts for why NP ellipsis is possible. NP ellipsis is subject to the generalization in (37), as shown in (55).

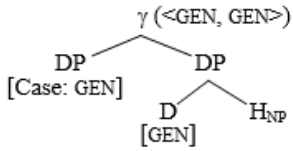
(55) a. Rome's destruction was worse than [$_{DP}$ London's [D [$_{NP}$ ~~destruction _~~]]].
b. *I bought the book because I heard good things about [$_{DP}$ the [$_{NP}$ ~~book~~]].

The question is how the DP with an elided NP in (55a) is labeled. The structure is more precisely as in (56).

(56) [$_{\gamma}$ London's [$_{DP}$ D [$_{NP}$ ~~destruction _~~]]]

It is standardly assumed that there is no φ-feature agreement in nominal phrases. But g can be labeled as <GEN, GEN> by Case feature sharing as in (57) if D values the Case feature of the subject as GEN.

(57)



If this analysis is correct, labeling by Case feature sharing is observed not only in those languages that lack φ-feature agreement but in English as well.

5. Conclusion

I examined argument ellipsis in Japanese and argued that two factors make it possible. The first is that the language lacks j-feature agreement. If an argument participates in j-feature agreement, it cannot be elided because of the activation condition. The second is that its suffixal Case (and predicate inflection) are weak heads. This allows the structures with ellipsis of all kinds of arguments, including the subject, to be properly labeled. It also makes scrambling possible. Finally, I discussed a way to extend the analysis to Turkish, Malayalam and Chinese. These languages allow object ellipsis but not subject ellipsis. A problem that stood out in the discussion was the fact that Chinese does not have suffixal Case and yet allows object ellipsis. I suggested that this is because labeling of {X, Y} structure by Case feature sharing is possible.

Acknowledgements

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Notes

1. It was pointed out by a reviewer that there are more recent PF deletion analyses that account for (4). As far as I can tell, those analyses are not based on the obligatory reconstruction property of long scrambling but exclude A'-movement generally out of elided arguments. For example, Bošković (2014) presents a theory that allows extraction out of the ellipsis site if a phase complement is elided but not if a phase is elided. On the other hand, it is argued in Sakamoto (2019) and Takahashi (2020) that operator movement in comparatives and clefts are possible out of elided CPs in Japanese. So, it remains to be seen whether those PF deletion analyses can be maintained.
2. I continue to use 'TP' below for ease of exposition when its labeling is not at issue.
3. It is assumed here that T in Japanese is a strong head as in Italian. This assumption becomes redundant if labeling by Case feature sharing is possible as suggested in Section 4.
4. As pointed out by a reviewer, Otaki (2011) also assumes the KP hypothesis and analyzes argument ellipsis as ellipsis of the DP complement of K. Neeleman and Szendrői (2007) draw the generalization that radical pro drop requires non-fusional Case morphology on pronouns and present a morphological account. Otaki extends this analysis to argument ellipsis.
5. It should be noted here that Turkish and Malayalam are both differential object making languages and it is not that an object always accompanies an overt Case marker. It remains to be seen how this affects the analysis.
6. Li (2014) points out that ellipsis of CP is possible in Chinese only when it is a complement of a Case-assigning transitive verb. This constitutes evidence for the analysis. Labeling by Case feature sharing is suggested in Saito (2016) and evidence from Late Archaic Chinese is discussed in Aldridge (2019).
7. I continue to assume that the activation condition blocks object ellipsis in English. V in (53b) accompanies unvalued j-features in the case of English and they fail to be valued because of the activation condition.

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