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19 Ellipsis

1 Introduction

Ellipsis in Japanese has been examined since the 1970's. Hinds (1973) observed the absence of VP-ellipsis and VP-preposing in Japanese and argued that the language lacks the VP-node.[1] The kinds of examples he considered are shown below with their English counterparts.

(1) a. *I left because John did [vp leave].*

   b. *Taroo ga   **kaetta node,**   watasi mo   kaetta.*
      Taroo NOM left   because I   also left
      'I also left because Taroo did.'

(2) a. *He said he would jump into the river, and [vp jump into the river] he did.*

   b. *Kawa ni tobikonda,   kare ga   (koto)*
      river to jumped.into he   NOM fact
      Lit. '(the fact that) jump into the river, he did'

Kuno (1978), on the other hand, tried to explain the absence of VP-ellipsis with what is now known as Lasnik's (1981) stray affix filter. VP-ellipsis strands Tense and hence, *do*-support is required in examples like (1a). Kuno argues that the absence of a rule analogous to *do*-support makes VP-ellipsis impossible in Japanese. When a modal is present, VP-ellipsis does not strand Tense as shown in (3).

Note: In this chapter, I focus on N'-ellipsis, VP-ellipsis, sluicing, and argument ellipsis. Among the analyses that imply other types of ellipsis are the PF deletion analysis of right node raising and the stripping analysis of right dislocation. The reader is referred to Mukai (2003) and An (2007) for the former and to Abe (1999) and Tanaka (2001) for the latter.

The material in this chapter was presented at various places and almost in the present form as the second of the five-part lecture series at Keio University on September 3–5, 2014. I have benefited from discussions with many people over the years, including Howard Lasnik, Keiko Murasugi, Daiko Takahashi, and Kensuke Takita. I would like to thank Hisatsugu Kitahara in particular for helpful comments on the material in Section 4, and Shigeru Miyagawa, John Haig, and an anonymous reviewer for editorial advice.

(3) *If Mary can eat it, John can t[VP eat it], too.*

But Kuno notes that the Japanese counterparts of the relevant modals are verbal
suffixes, as exemplified in (4), and hence VP-ellipsis necessarily produces a stray affix.

(4) *Taroo wa sore ga tabe-rare-ru*
     Taroo TOP it   NOM eat-can-PRS
     'Taroo can eat it.'

Thus, the discussion on ellipsis in Japanese centered around its absence until the
1980's with the exception of Inoue's (1978) brief mention of sluicing, which I will
come back to directly.[2]

However, the situation changed radically in the 1990's. Saito and Murasugi
(1990), Otani and Whitman (1991), Takahashi (1994), and Oku (1998) respectively
argued for N'-ellipsis, VP-ellipsis, sluicing, and argument ellipsis in the language.
Some examples are shown in (5).

(5) a. N'-ellipsis
         Taroo no   taido   wa [DP Hanako no [NP e] yorimo yoi.
         Taroo GEN attitude TOP Hanako GEN   than   good
         'Taroo's attitude is better than Hanako's.'

     b. sluicing
         Kare wa dokoka   e   itta   ga,   boku
         he   TOP somewhere to went though I
         wa [CP doko e [c [IP e] ka]] siranai.
         TOP where to   Q   know.not
         'He went somewhere, but I don't know where.'

     c. argument ellipsis
         Taroo wa zibun no kuruma o aratta. Hanako mo [VP e] aratta.
         Taroo TOP self GEN car   ACC washed Hanako also   washed
         'Taroo washed his car. Hanako also washed his/her car.'

In the following section, I will discuss the initial analyses for these phenomena and
present a preliminary picture of ellipsis in Japanese.

Many new descriptive issues arose in the efforts to develop those initial analyses.
For example, Hoji (1998) presents evidence against the VP-ellipsis analysis, which

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2 Another example of this is found in Kuno (1973). He considers what appears to be "backward
gapping" in Japanese and suggests that the relevant examples should be analyzed as instances of
right node raising instead.

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applies to argument ellipsis as well, and proposes that the relevant examples are to
be accounted for with *pro*. Funakoshi (2012, 2013) argues against argument ellipsis
in favor of V-stranding VP ellipsis. I will consider these works in Section 3. I will
argue there that the potentially problematic examples they present do not constitute
evidence against argument ellipsis but instead provide further evidence for its
analysis in terms of LF copying. At the end of the section, I will discuss Takita's
(2012) new evidence for sluicing and Watanabe's (2010) argument for a QP projection
in Japanese noun phrases on the basis of N'-ellipsis that strands a classifier phrase.
The discussions in this section and the next aim to lay out bases for future research
rather than to present concrete hypotheses.

In Section 4, I will speculate on the direction for providing deeper explanations
for the ellipsis phenomena. As argument ellipsis is not observed in many languages,
including English, it should be explained why it is possible only in Japanese and
a few other languages. The second issue concerns the syntactic conditions on N'-
ellipsis, VP-ellipsis, and sluicing. A generalization is proposed in Saito and Murasugi
(1990) and Lobeck (1990) that the complements of D (N'-ellipsis), T (VP-ellipsis), and
C (sluicing) can be elided only when the specifier positions of these functional heads
are filled. This, if valid, demands an explanation. I will discuss these issues and
suggest directions to pursue them. The discussion is based on the mechanism of φ-
feature agreement (Chomsky 2000, 2008) as well as the labeling algorithm (Chomsky
2014). Section 5 concludes this chapter.

2 A Preliminary Survey of the Phenomena

In this section, I will briefly go over the initial arguments for N'-ellipsis (Saito and
Murasugi 1990), VP-ellipsis (Otani and Whitman 1991), sluicing (Takahashi 1994),
and argument ellipsis (Oku 1998; Kim 1999) in Japanese. The argument ellipsis
analysis developed out of the VP-ellipsis hypothesis and was intended to replace
it. Further arguments for argument ellipsis are presented in Saito (2004), Shinohara
(2004), and Takahashi (2008). The first in particular raises doubts about the sluicing
analysis. I will discuss these works as well and present a preliminary picture of
ellipsis phenomena in Japanese.

2.1 N'-ellipsis

The purpose of Saito and Murasugi (1990) was two-fold. One was to show that
ellipsis provides evidence for CP and DP structures, and the other was to argue for
N'-ellipsis in Japanese. Let me start with the first.[3]

N'-ellipsis and sluicing have mysterious properties if the X'-theory of Chomsky (1970) is assumed. First, what is elided is an intermediate projection as shown in (6) and (7).

(6) a. *I read Bill's book, but I haven't read [NP London's [N' book]].*
b. *Rome's destruction was worse than [NP London's [N' destruction]].*

(7) a. *John bought something, but I don't know [S' what [S he bought]].*
b. *John knows [S' which girl [S Mary likes]], but he doesn't know [S' which boy [S she likes]].*

This is puzzling given that the targets of grammatical operations are limited to heads and maximal projections. Further, N'-ellipsis is possible only with a genitive remnant, and sluicing requires a wh-phrase that moved out of the elided S. Thus, (8) and (9) are ungrammatical in contrast with (6) and (7).

(8) a. *John said he saw a unicorn, but I don't know [S' if [S he saw a unicorn]].*
b. *I want to read the book because I hear good thing about [NP the [N' book]].*

(9) a. *John has a dog, but Mary doesn't have [NP a [N' dog]].*
b. *John denied that he cheated, but I believe [S' that [S he cheated]].*

It is curious that the ellipsis of N' and S is dictated by the element in the specifier position.

Saito and Murasugi (1990) point out that the DP hypothesis (Fukui and Speas 1986; Abney 1987) and the CP hypothesis (Stowell 1981; Chomsky 1986a) make it possible to describe the phenomena more straightforwardly. What is elided are the NP complement of D in the case of N'-ellipsis and the TP complement of C in sluicing. Both are maximal projections. Further, the genitive phrases in (6) are specifiers of D whereas the articles in (8) are D heads. Similarly, the wh-phrases in (7) are specifiers of C whereas the *if* and *that* in (9) occupy the C position. Then, N'-ellipsis and sluicing can be characterized as the ellipsis of the complements of D and C in the presence of a specifier. If VP-ellipsis applies to the VP (or vP) complement of T, the three elliptic phenomena receive a unified description. (10) shows the version of the generalization proposed in Richards (2003).[4]

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4. Both Saito and Murasugi (1990) and Lobeck (1990) state that there must be a Spec-head agreement relation between XP and F. However, Richards (2003) argues that this is not only redundant but also incorrect.

(10) <u>Ellipsis</u>: The complement of a functional category F (D, C, or T) can be elided only when F has a specifier, as illustrated below.

XP
F'
  FP
  F' — YP

The simplicity of this description provides support for the DP and CP hypotheses. Having proposed (10), Saito and Murasugi (1990) go on to examine N'-ellipsis in Japanese. It was known that there are examples that superficially look like instances of N'-ellipsis. Thus, (11a) looks very similar to its English counterpart in (11b).

(11) a. Taroo no hon wa [Hanako no __] yori omosiroi.
Taroo GEN book TOP Hanako no than interesting
b. *John's book is more interesting than [Mary's __].*

Okutsu (1974), however, presents an alternative analysis for examples of this kind. He first notes that Japanese has a pronoun that corresponds roughly to one in English and is homophonous with the genitive Case marker. It is exemplified in (12).

(12) Akai no o mittu kudasai.
red one ACC three give.me
'Please give me three of the red ones.'

Then, he proposes that Hanako no in (11a) is derived as in (13) with the deletion of the genitive no.

(13) [Hanako no no]
Hanako GEN one

If (11a) can indeed be derived this way, it does not show that there is N'-ellipsis in Japanese.

Saito and Murasugi try to avoid the interference of the pronoun no just illustrated. Kamio (1983), for example, shows that the pronoun no is employed only when the noun phrase refers to a concrete (and probably specific) object and can never be used as a pro-form of an abstract noun. One of his examples is shown in (14b).

(14) a. Taroo wa yakyuuboo o kabutte ita. Ziroo mo aoi
Taroo TOP baseball.cap ACC wearing.was Ziroo also blue
no o kabutte ita.
one ACC wearing.was.
'Taroo was wearing a baseball cap. Ziroo also was wearing a blue one.'

b. *Taroo mo Ziroo mo sinnen o motte iru.*
   Taroo also Ziroo also belief ACC have

Tokuni   Taroo wa katai <u>no</u> o motte iru.
   particularly Taroo TOP firm one ACC have
'Both Taroo and Ziroo have beliefs. In particular, Taroo has a firm one.'

(14a) is fine as *no* stands for a concrete noun *yakyuuboo* 'baseball cap' and the DP headed by *no* refers to a specific object. On the other hand, (14b) shows that the pronoun cannot be employed for the abstract noun *sinnen* 'belief, conviction'. The examples in (15) confirm Kamio's generalization.

(15) a. *Taroo no kenkyuu ni taisuru taido wa totemo*
     Taroo GEN research toward attitude TOP very
    yoi <u>no</u> datta.
    good one was
    'Taroo's attitude toward research was a very good one.'

b. *Hanako no supootu ni taisuru zyoonetu wa totemo*
    Hanako GEN sports toward enthusiasm TOP very
    hagesii <u>no</u> datta.
    passionate one was
    'Hanako's enthusiasm toward sports was a very passionate one.'

c. *Yamada-sensei no yasasisa wa totemo mi ni simiru <u>no</u> datta.*
    Yamada-teacher GEN kindness TOP very touching one was
    'Prof. Yamada's kindness was a touching one (touched my heart).'

These examples indicate that the pronoun *no* cannot stand for nouns such as *taido* 'attitude', *zyoonetu* 'enthusiasm', and *yasasisa* 'kindness'.

Given this, Saito and Murasugi present examples of the following kind as evidence for N'-ellipsis in Japanese:

(16) a. *Taroo no sinnen wa [Ziroo <u>no</u> __] yorimo katai.*
    Taroo GEN belief TOP Ziroo GEN than firm
    'Taroo's belief is firmer than Ziroo's.'

b. *Taroo no kenkyuu ni taisuru taido wa [Hanako <u>no</u> __]*
    Taroo GEN research toward attitude TOP Hanako GEN
    ni kurabe-reba totemo yoi.
    to compare-if very good
    'Taroo's attitude toward research is very good if we compare it with Hanako's.'

c. *Hanako no supootu ni taisuru zyoonetu wa [Taroo <u>no</u> __] izyoo da,*
    Hanako GEN sports toward enthusiasm TOP Taroo GEN above is
    'Hanako's enthusiasm toward sports is above Taroo's.'

d. *Yamada-sensei no yasasisa mo [Tanaka-sensei <u>no</u> __] mo*
    Yamada-teacher GEN kindness also Tanaka-teacher GEN also
    totemo mi ni simiru.
    very touching
    'Prof. Yamada's kindness as well as Prof. Tanaka's touched my heart.'

These examples are expected to be ungrammatical if the underlined *no* is a pronoun, because the pronoun *no* cannot be employed in place of abstract nouns. Yet, they are perfectly grammatical. This suggests that *no* in these examples is the genitive Case followed by an elided NP. The structure of the bracketed DP in (16b), for example, is as in (17).

(17) [DP *Hanako no* [NP *kenkyuu ni taisuru taido*]]
    Hanako GEN research toward attitude

In Japanese nominal projections, the genitive Case marker follows any DP or PP, as shown in (18).

(18) a. *Hanako no Tookyoo de no kabu no torihiki*
    Hanako GEN Tokyo in GEN stock GEN dealing
    'Hanako's dealing of stocks in Tokyo'

b. *Taroo no san-kai no multimon de no Yooroppa*
    Taroo GEN three-time GEN no,penny with GEN Europe
    e no ryokoo
    to GEN trip
    'Taroo's three trips to Europe with no money'

However, it is not the case that any genitive phrase can be the remnant in N'-ellipsis. Thus, there is a clear contrast between (19a, b) and (19c, d).

(19) a. *Taroo no taido wa [Hanako no __] yorimo yoi.*
    Taroo GEN attitude TOP Hanako GEN than good
   'Taroo's attitude is better than Hanako's.'

b. *Rooma no hakai wa [Kyooto no __] yorimo hisan datta.*
    Rome GEN destruction TOP Kyoto GEN than misery was
    'Rome's destruction was more miserable than Kyoto's.'

c. *Saikin wa kumori no hi ga [ame no __] yorimo ooi.
nowadays TOP cloud GEN day NOM rain GEN than plentiful
'Nowadays, there are more cloudy days than rainy days.'

d. *Taroo wa issyuukan ni san-satu no hon o
Taroo TOP one-week in three-volume GEN book ACC
yomu ga, Hanako wa [go-satu no __] o yomu.
read though Hanako TOP five-volume GEN ACC read
'Though Taroo reads three books per week, Hanako reads five.'

This contrast provides further evidence for N'-ellipsis in Japanese. The remnant genitive phrase is the subject in (19a) and the object in (19b). On the other hand, those in (19c, d) are adjuncts. Recall that N'-ellipsis applies as in (20), that is, the complement of D is elided in the presence of a specifier.

(20)

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        FP
       /  \
     XP    F'
          /  \
         F'   YP
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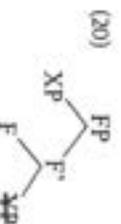
Then, N'-ellipsis is legitimate only when the remnant genitive phrase is in Spec, DP. And there is independent evidence that arguments but not adjuncts can move to this position. For example, (21) shows that the external and internal arguments can raise to Spec, DP but an adjunct them cannot.

(21) a. [DP the barbarians' [NP t₁ [N' destruction of the city then]]]
b. [DP the city's [NP [N' destruction t₁ then]]]
c. *[DP there's [NP [N' destruction of the city t₁]]]

Thus, the N'-ellipsis analysis correctly predicts the contrast in (19). Saito and Murasugi (1990) point out two consequences of the proposed analysis.

As an overt D is not observed in Japanese, it was unclear whether the language has this category. Fukui (1988), for example, proposes that languages are parameterized with respect to the presence vs. absence of functional categories and Japanese belongs to the latter group. The analysis above implies that D is present in Japanese and suggests the universality of the category. Secondly, genitive Case in Japanese, unlike genitive in English, can be assigned (or valued) within NP. (18c.), for example, is ungrammatical because ame no 'rain GEN' cannot move to Spec, DP. Yet, (22) is perfectly grammatical without ellipsis.

(22) [ame no hi]
rain GEN day
'a rainy day'

Then, the genitive on ame 'rain' must be licensed within the projection of N. (23) points to the same conclusion.

(23) Amerika-gun no Iraku no bakugeki wa [DP Igirisu-gun no
U.S.-force GEN Iraq GEN bombing TOP U.K.-force GEN
[NP Iraku no bakugeki]] yorimo nagaku tuzuita.
Iraq GEN bombing than long continued
'The U.S. force's bombing of Iraq lasted longer than the British force's.'

In this example, the elided NP includes the object Iraku no 'Iraq GEN' as well as the head noun. Then, Saito and Murasugi (1990) and Kitagawa and Ross (1982), propose that genitive in Japanese is a contextual Case that is inserted as in (24).

(24) [α DP/PP β] → [α DP/PP no β], where α and β are projections of N or D.

2.2 VP-Ellipsis and Sluicing

Otani and Whitman (1991) and Takahashi (1994) argued for VP-ellipsis and sluicing in Japanese respectively. I will briefly go over these works in this subsection.

The arguments of Otani and Whitman (1991) start with an observation on the interpretation of null objects.

(25) Taroo wa zibun no kuruma o aratta. Hanako mo [e] aratta.
Taroo TOP self GEN car ACC washed Hanako also washed
'Taroo washed his car. Hanako also washed his/her car.'

The null object in the second sentence allows both the strict interpretation (Hanako also washed his (= Taroo's) car) and the sloppy interpretation (Hanako also washed her (= Hanako's) car). The sloppy interpretation is unexpected if the null object is pro as was widely assumed since Kuroda (1965). The following examples indicate that sloppy interpretation obtains with ellipsis but not with pronouns:

(26) a. John loves his mother, and Mary does, too. (Mary loves his/her mother)
b. John loves his mother, and Mary loves her, too. (Mary loves his mother)

In fact, only the strict interpretation is possible if an overt pronoun occurs in the position of the null object in (25).

(27) Taroo wa zibun no kuruma o aratta. Hanako mo sore o aratta.
Taroo TOP self GEN car ACC washed Hanako also it ACC washed
'Taroo washed his car. Hanako also washed it (= his car).'

Huang (1987) discusses Chinese examples similar to (25), and presents an analysis in terms of V-stranding VP-ellipsis. Otani and Whitman (1991), then, argue that the analysis is applicable to Japanese as well. The idea is that (25) is derived with V-to-T raising followed by VP-ellipsis, as illustrated in (28).

(28) [TP DP [T·TP DP t·] V+T]]
         ↳

This analysis implies, contrary to what Kuno (1978) assumed, that V-T merger is achieved by V-raising in Japanese.

As mentioned at the outset of this chapter, Inoue (1978) noted that examples of the following kind may instantiate sluicing:

(29) Kare wa dokoka e itta ga. boku-wa [CP doko e ka] siranai.
he TOP somewhere to went though I-TOP where to Q know.not
'He went somewhere, but I don't know where.'

Takahashi (1994) presents an argument for this based on the possibility of sloppy interpretation, just as Otani and Whitman (1991) did for VP-ellipsis. One of his examples is shown in (30).

(30) Taroo wa [CP naze zibun ga sikarareta ka] wakatte inai
Taroo TOP why self NOM scold.PASS.PST Q understand.not
ga, Hanako wa [CP naze ka] wakatte iru.
though Hanako TOP why Q understand
'Though Taroo doesn't understand why he was scolded, Hanako understands why he/she was scolded.'

As indicated, the example allows both strict and sloppy interpretations. Takahashi takes this as evidence that (30) is derived by ellipsis, and as confirmation of the sluicing analysis suggested in Inoue (1978). According to this analysis, the embedded CP in (29) has the structure in (31).

(31) [CP [doko e][C [TP kare ga t· itta] ka]]
where to he NOM went Q

Takahashi (1994) draws a number of consequences from this analysis. Among them is that Japanese has optional wh-movement, as argued in Kuroda (1988). Recall that sluicing elides TP when Spec, CP is filled. The wh-phrase doko e 'where to' in (30) serves as a proper remnant in Spec, CP. As predicted, sluicing is illicit when Spec, CP is absent, as shown in (32).

(32) *Hanako wa [CP [TP pro soko ni itta] to] itte iru ga,
Hanako TOP there to went COMP saying.is though
boku wa [CP naze soko ni itte] ka(dooka)] siranai.
I TOP there to went whether know.not
Lit. 'Though Hanako says that she went there, I don't know if.'

Takahashi also points out some potential problems with his analysis. One is that the copula da 'is' can appear in the CP that sluicing applies to. Thus, (30), for example, remains grammatical and ambiguous between strict and sloppy readings with da, as shown in (33).

(33) Taroo wa [CP naze zibun ga sikarareta ka] wakatte inai
Taroo TOP why self NOM scold.PASS.PST Q understand.not
ga, Hanako wa [CP naze da ka] wakatte iru.
though Hanako TOP why is Q understand
'Though Taroo doesn't understand why he was scolded, Hanako understands why he/she was scolded.'

There is no position for this copula under the sluicing analysis. Given this, Takahashi considers an alternative analysis with a pro subject instead of sluicing, as in (34).

(34) ...., Hanako wa [CP [TP pro naze (da)] ka]] wakatte iru.
Hanako TOP why is Q understand
'...., Hanako understands why it is.'

In this context, da is optional. Hence, the analysis in (34) correctly accounts for its absence in (30) and its occurrence in (33).

However, Takahashi rejects this analysis on the ground that it fails to account for the sloppy interpretation. Recall that pronouns only allow strict interpretation. If (34) with an overt pronoun in fact does not allow sloppy interpretation, as shown in (35).

(35) ...., Hanako wa [CP [TP sore ga naze (da) ka]] wakatte iru.
Hanako TOP it NOM why is Q understand
'...., Hanako understands why it is (= why Taroo was scolded).'

The structure in (34), then, does not seem to be consistent with the sloppy interpretation of (33). Given this, Takahashi maintains the sluicing analysis and leaves the optional occurrence of *da* as a problem. I will come back to this issue in the following subsection.

2.3 Argument Ellipsis

The works introduced so far argued that Japanese has some of the elliptic constructions that are observed in English. This trend takes a sharp turn with the proposal of argument ellipsis by Oku (1998) and Kim (1999). They both show that there are examples with elided arguments that cannot be analyzed as instances of V-stranding VP-ellipsis. I will briefly introduce their arguments and then discuss the supporting evidence presented in Saito (2004), Shinohara (2004), and Takahashi (2008).

Oku (1998) first shows that not only null objects but also null subjects allow sloppy interpretation. One of his examples is given in (36).

(36) a. *Hanako wa* [$_{CP}$ [$_{TP}$ *zibun no teian ga satyoosareru*]
        Hanako TOP self GEN proposal NOM adopt.PASS.PRS

     to]   *omotte iru.*
        COMP think

     'Hanako thinks that her proposal will be adopted.'

    b. *Taroo-mo* [$_{CP}$ [$_{TP}$ [e] *satyoosareru]*   *to]*   *omotte iru.*
        Taroo-also adopt.PASS.PRS COMP think

     'Taroo also thinks that her/his proposal will be adopted.'

As a subject cannot be elided with VP-ellipsis, Oku concludes that Japanese allows subjects to be directly elided.

He then argues that null objects can be generated in the same way, that is, that any argument can be directly elided. A relevant example is shown in (37).

(37) *Hanako wa teinei ni zibun no genkoo o minaosita.*
     Hanako TOP carefully self GEN manuscript ACC look.over.PST

     Demo Taroo wa minaosanakatta.
     but Taroo TOP look.over.not.PST

     'Hanako looked over her manuscript carefully. But Taroo didn't look over her/his manuscript.'

The second sentence is missing the object. If the object is elided by VP-ellipsis, the sentence should have the interpretation that Taroo did not go over his manuscript.

carefully because the VP-internal adverb *teinei ni* 'carefully' occurs in the first sentence. The English example in (38) illustrates this.

(38) *Mary looked over her manuscript carefully, but John didn't.*

But the second sentence in (37) only has the sloppy reading that Taroo did not look over his manuscript at all. This raises doubts concerning the VP-ellipsis analysis. Oku then proposes that the sloppy interpretation derives not from VP-ellipsis but from the ellipsis of the object.

Kim (1999) reaches the same conclusion for Korean and Japanese on independent grounds. One of his arguments is based on the double-accusative construction in Korean, illustrated in (39).

(39) a. *Mike nun James lul tali lul ketechassta.*
        Mike TOP James ACC leg ACC kicked

     'Mike kicked James on the leg.'

    b. **Mike nun tali lul James lul ketechassta.*
        Mike TOP leg ACC James ACC kicked

As shown in (39b), the accusative phrase that expresses a body part cannot precede the accusative phrase that refers to a person. Given this, Kim observes that the first accusative phrase can be elided and receive sloppy interpretation as in (40b).

(40) a. *Jerry nun caki uy ai lul phal ul ttayliessta.*
        Jerry TOP self GEN child ACC arm ACC hit

     'Jerry hit his child on the arm.'

    b. *Kulena Sally nun [e] tali lul ttayliessta.*
        but Sally TOP leg ACC hit

     'But Sally hit his/her child on the leg.'

If VP-ellipsis is applied in (40b), *tali lul* 'leg ACC' should also be elided as it cannot precede the elided DP. Hence, the example cannot be derived by VP-ellipsis. Kim, like Oku (1998), concludes that arguments can be elided directly.[5]

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5 The Japanese counterpart of (39a) is degraded as the language does not allow two accusative phrases in a single clause. (See, for example, Harada 1973 and Kuroda 1988 for detailed discussion on this point.) However, the relevant contrast and interpretation obtain in the language as well. The Japanese counterpart of (39b) is hopeless and that of (40b) allows sloppy interpretation. Hence, Kim's (1999) argument carries over to Japanese.

Saito (2004) points out that the argument ellipsis hypothesis provides a straightforward solution to the problem with Japanese sluicing noted at the end of the preceding subsection. Recall that, as Takahashi (1994) acknowledges, the sluicing analysis fails to account for the optional occurrence of the copula *da* 'is' in (33), repeated below as (41).

(41) *Taroo wa* [CP *naze zibun ga   sikarareta   ka*] *wakatte inai*
       Taroo TOP why self   NOM scold.PASS.PST Q   understand.not
       ga,   Hanako wa [CP *naze da ka*] *wakatte iru.*
       though Hanako TOP   why is Q   understand
       'Though Taroo doesn't understand why he was scolded, Hanako understands
       why he/she was scolded.'

If the second embedded CP has the structure in (42), there is no position for the copula.

(42) [CP *naze* [C' [TP ~~*zibun-ga t_i sikarareta*~~] *ka*]]

It was noted in subsequent works such as Nishiyama, Whitman and Yi (1996) that the optional presence of the copula suggests that the elliptic structure derives from a cleft sentence. Then, the second clause in (41), with sloppy interpretation, will be as in (43) when it is fully spelled out.

(43) *Hanako wa* [CP [TP [CP Op] [C' [TP *zibun ga   t_i sikarareta*]   *no*]]
       Hanako TOP   self   NOM scold.PASS.PST COMP
       ga   naze_i (da)] ka] *wakatte iru.*
       NOM why   is   Q   understand
       Lit. 'Hanako understands why it is that self was scolded.'

As indicated, the copula is indeed optional in cleft sentences.[6] Nishiyama, Whitman and Yi (1996) present independent evidence for this approach. They point out that the remnant need not be a wh-phrase, as shown in (44b).

(44) a. *Taroo ga   dareka   kara tegami o   uketotta ga,*
        Taroo NOM someone from letter ACC received though
        boku wa [CP *dare kara ka*] *wakaranai.*
        I   TOP   who from Q   know.not
        'Taroo received a letter from someone, but I don't know from whom.'

b. *Taroo ga   dareka   kara tegami o   uketotta ga,*
   Taroo NOM someone from letter ACC received though
   boku wa [CP *Hanako kara ka*] *wakaranai.*
   I   TOP   Hanako from Q   know.not
   Lit. 'Taroo received a letter from someone, but I don't know whether
   from Hanako.'

Examples like (44b) cannot be analyzed as instances of sluicing, but have corresponding cleft sentences. The embedded CP in (44b) can be an elliptic form of the cleft sentence in (45).[7]

(45) [CP [C' [TP [CP Op] [C' [TP *Taroo ga   t_i tegami o   uketotta*]
                         Taroo NOM   letter ACC received
       no]] *ga   [Hanako kara], (da)] ka*]]
       COMP NOM Hanako from   is   Q
       'whether it is from Hanako that Taroo received a letter'

Although the cleft analysis looks plausible, it does not provide a solution to the problem Takahashi (1994) raised. Nishiyama, Whitman and Yi (1996) propose that the embedded subject is *pro*, standing for the embedded CP subject in (43) except that the embedded subject is *pro*, standing for the embedded CP subject in (43) that expresses the presupposition in the cleft structure. But it was noted in Takahashi (1994) that there is no sloppy interpretation with a pronominal subject. The relevant example in (35) is repeated below as (46).

(46) ....*Hanako wa* [CP [TP *sore ga   naze (da) ka*]] *wakatte iru.*
          Hanako TOP   it NOM why is Q   understand
       '.... Hanako understands why it is (= why Taroo was scolded).'

Nishiyama, Whitman and Yi, then, suggests that null pronouns, unlike overt pronouns, allow sloppy interpretation, but this begs the question.

What Saito (2004) points out is that argument ellipsis provides a solution to this problem. Given that subjects as well as objects can be directly elided, (41) can be derived from (43) by applying argument ellipsis to the embedded CP subject as in (47).

(47) Hanako wa [CP [TP [DP Op₁ [TP zibun ga t₁ sikarareta] meii ga
Hanako TOP   self   NOM scold.PASS.PST COMP NOM

why   is   Q   understand
maze₁, (da₁) ka] wakatte iru.

Lit. 'Hanako understands why it is that self was scolded.'

As there is no pro subject and the example is derived by ellipsis, sloppy interpreta-
tion is expected. The "sluicing" phenomenon, then, provides additional evidence for
argument ellipsis.

Another piece of supporting evidence for argument ellipsis is presented in
Shimohara (2004) and Takahashi (2008). One of Takahashi's examples is given in (48)
with slight modification.

(48) a. Zyosi   no   dareka   ga   hotondo   no   sensei   o   sonkeisite iru.
        female GEN someone NOM almost.all GEN teacher ACC respect

   'Some girl has respect for most of the teachers.'

   b. Dansi   no   dareka   mo   [e]   sonkeisite iru.
      male   GEN someone also   respect

   'Some boy also has respect for them/most of the teachers.'

The null object in (48b) can be interpreted as a pronoun, that is, as those teachers
that a girl has respect for. If the object is an overt pronoun, karera o 'they ACC',
this is the only possible interpretation. Takahashi points out that (48b) has another
reading. The sentence can mean that a boy has respect for most of the teachers, and
in this case, the teachers need not coincide with those that a girl respects. This,
Takahashi argues, is expected if (48b) can be derived with argument ellipsis as
in (49).

(49) Dansi   no   dareka   mo   hotondo   no   sensei   o   sonkeisite iru.
     male   GEN someone also almost.all GEN teacher ACC respect

   'Some boy also has respect for most of the teachers.'

A similar example with a null subject is shown in (50).

(50) a. San-nin-izyoo   no   gakusei   ga   Taiwan   e   itta.
        three-person-more.than GEN student NOM Taiwan to went

   'More than three students went to Taiwan.'

   b. [e]   Oranda   e   mo   itta.
           Holland to also went

   'They/more than three students also went to Holland.'

(50b) has the interpretation that more than three students went to Holland. In addi-
tion to the reading that those students who went to Taiwan also went to Holland.
As discussed in this subsection, argument ellipsis was initially proposed by Oku
(1998) and Kim (1999) as an alternative to V-stranding VP-ellipsis. If the proposal in
Saito (2004) is correct, it accounts for Takahashi's (1994) "sluicing" examples as
well. Hence, there is no clear evidence at this point that Japanese has VP-ellipsis or
sluicing. At the same time, the discussion in this section does not show that Japanese
does not have sluicing. I will introduce Takita's (2012) new argument for sluicing in
the following section.

3 Descriptive Issues

Interesting issues have been raised by several papers, some sympathetic and others
critical to the proposals introduced in the preceding section. I will consider some of
them in this section. Hoji (1998) presents evidence against Otani and Whitman's
(1991) proposal on VP-ellipsis, and argues that the relevant examples can be analyzed
with pro. I will discuss this in Section 3.1, where I point out a similarity in distribution
between elided arguments and pro. In Section 3.2, I will consider Funakoshi's (2012)
evidence against argument ellipsis and for V-stranding VP-ellipsis. The issue to be
taken up there is whether elements that form operator-variable chains are subject
to argument ellipsis. Finally, in Section 3.3, I will briefly discuss Takita's (2012)
argument for sluicing and Watanabe's (2010) argument for N'-ellipsis that strands
classifier phrases.

3.1 Argument Ellipsis and *pro*

Hoji (1998) presents an argument against VP-ellipsis, which applies to argument
ellipsis as well. Among his crucial examples is (51).

(51) a. Subete   no   nihonzinhuuhu   ga   betubetu   no   gakusei
        all   GEN Japanese.couple NOM separate   GEN student

   o   suisensita.
   ACC recommended

   'Every Japanese couple recommended different students.'

   b. Subete   no   amerikazinhuuhu   mo   [e]   suisensita.
      all   GEN American.couple   also   recommended

   'Every American couple also recommended different them.'

(51a) is many-ways ambiguous, and one possible reading is that for each Japanese couple, the wife and the husband recommended different students. What Hoji points out is that (51b) with a null object lacks the parallel interpretation. That is, (51b) cannot mean that for each American couple, the wife and the husband recommended different students. This is unexpected if (51b) can be derived with VP-ellipsis. The English counterpart of (51b) with VP-ellipsis indeed has this reading, as shown in (52b).

(52) a. *Every Japanese couple recommended different students.*

    b. *Every American couple did, too.*

(51b) raises an interesting question for argument ellipsis as well. If the example can be derived with an elided object as in (53), we would expect it to have the missing interpretation.

(53) *Subete no amerikazinhuuhu mo betubetu no gakusei ⊘*
    all   GEN American.couple also separate GEN student ACC
    suisensita.
    recommended

Having argued against VP-ellipsis, Hoji (1998) goes on to consider why examples like (54b) can have sloppy interpretation.

(54) a. *Subete no itinensei ga zibun no booru o ketta.*
    all   GEN freshman NOM self GEN ball ACC kicked
    'Every freshman kicked her/his own ball.'

    b. *Subete no ninensei mo [e] ketta.*
    all   GEN sophomore also   kicked
    'Every sophomore also kicked her/his own ball.'

Here, Hoji suggests that the sloppy reading of (54b) is only apparent. More specifically, he suggests that the null object is *pro* that stands for the indefinite *booru* 'a ball'. Then, the precise meaning of (54b) is that every sophomore kicked a ball. This is consistent with and can depict a situation where every sophomore kicked her/his own ball. Hoji argues that the preceding discourse provides the appropriate context to make it plausible that the ball that each sophomore kicked is her/his own.

It is argued in Saito (2003, 2007) that Hoji's (1998) analysis of (54) cannot be maintained as such. For example, the analysis faces a problem when the second sentence contains negation. Let us consider the simpler example in (55).

---

(55) a. *Taroo wa zibun no kuruma o aratta.*
    Taroo TOP self GEN car   ACC washed
    'Taroo washed his car.

    b. *Demo Hanako wa [e] arawanakatta.*
    but   Hanako TOP   wash.not.PST
    'But Hanako didn't wash it/her car.'

(55b) clearly allows sloppy reading in addition to strict reading: it can mean that Hanako did not wash her car. Thus, the sentence can be true when Hanako washed Taroo's car but not her own. The indefinite *pro* analysis fails to account for this because the following example only means that Hanako did not wash any car at all:

(56) *Hanako wa kuruma o arawanakatta.*
    Hanako TOP car   ACC wash.not.PST
    'Hanako didn't wash a car.'

Thus, (55) shows that the indefinite *pro* analysis, at least in the form proposed in Hoji (1998), is not a viable alternative to argument ellipsis.

Yet, the relation between *pro* and argument ellipsis is an important topic that needs to be pursued further. First, it is clear from examples like (57) that *pro* occurs in Japanese independently of argument ellipsis.

(57) Context: Hanako is looking for her stapler.

    Taroo: [e] soko ni aru yo.
            there at is   PART
        'It is there!'

Further, the distributions of *pro* and elided arguments seem to be identical. Let us first consider the distribution of *pro* by looking at its occurrence in relative clauses. In response to Kuno's (1973) observation that Japanese relatives do not exhibit island effects, Perlmutter (1972) argued that this is because a relative gap in Japanese need not be produced by movement but can be a *pro*. According to this analysis, Kuno's example in (58) is analyzed with a *pro* in the most deeply embedded subject position bound by the relative head, *sinsi* 'gentleman'.

(58) [np [tp [tp pro₁ kite iru] yoohuku₂] ga yogorete iru] sinsi₁
                  wearing.is clothes   NOM dirty.is   gentleman
    Lit. 'the gentleman who the clothes that he is wearing is dirty'

Murasugi (1991) examines the distribution of *pro*, based on Perlmutter's analysis, and shows that *pro* can occur in the positions of locative and temporal phrases, in addition to argument positions, but not in positions of reason and manner phrases.[8] Some relevant examples are shown in (59).

(59) a. [DP [TP *Hanako ga* [DP [TP (*sore, o*) *motte iru*] *hito*] *o*
Hanako NOM it ACC have person ACC

sagasite iru] kisyoobon]
looking.for.is rare.book

Lit. 'the rare book that Hanako is looking for a person who has it'

b. [DP [TP *Hanako ga* [DP [TP (*soko, ni*) *sunde iru*] *hito*] *o*
Hanako NOM there in live person ACC

sitte iru] mati]
know town

Lit. 'the town that Hanako knows a person who lives there'

c. [DP [TP *Hanako ga* [DP [TP *(sore, de) kubi-ni natta*] *hito*] *hito*]
Hanako NOM it for fired.was person

o sitte iru] riyuu]
ACC know reason

Lit. 'the reason that Hanako knows a person who was fired for it'

These examples are all grammatical with an overt resumptive pronoun. In (59a–b), *pro* can be substituted for the overt pronoun, but not in (59c).

It was already shown that subjects and objects can be elided with argument ellipsis. (60) shows that argument ellipsis applies to locative phrases as well.

(60) a. *Taroo wa* [*zibun no oya no ie ni*] *sunde iru.*
Taroo TOP self GEN parent GEN house in live
'Taroo lives in his parents' house.'

b. *Demo Hanako wa* [e] *sunde inai.*
but Hanako TOP live.not
'But Hanako doesn't live there/in her parents' house.'

(60b) allows sloppy interpretation, which indicates that the locative phrase, *zibun no oya no ie ni* 'self GEN parent GEN house in' can be elided. If the pronoun, *soko ni* 'there in', is substituted for the null locative in (60b), the sloppy reading disappears. On the other hand, (61) indicates that a reason phrase cannot be elided.

(61) a. *Watasi wa* [DP *Taroo ga zibun no sippai de*
I TOP Taroo NOM self GEN mistake for

kubi-ni natta to] *kiite iru.*
fired.was COMP hear

'I hear that Taroo was fired because of his own mistake.'

b. *Demo* [DP *Hanako ga* (*[e]) *kubi-ni natta to*] *wa kiite inai.*
but Hanako NOM fired.was COMP TOP hear.not

'But I haven't heard that Hanako was fired.'

(61b) simply means that I have not heard that Hanako was fired. As the embedded clause cannot be construed with 'for Taroo's mistake' (strict reading) or with 'for Hanako's mistake' (sloppy reading), the example shows that a reason phrase cannot be expressed as *pro* or be elided.[9]

The discussion above suggests that the distributions of *pro* and elided arguments are identical. If this is indeed the case, it calls for an explanation. One possibility is that elided arguments are *pro*, as Hoji (1998) proposed. I will speculate on an alternative possibility in the following section. But I will first consider Hoji's important example in (51), together with other similar examples, in the following subsection.

3.2 The Non-Applicability of Argument Ellipsis to Operators and Variables

Funakoshi (2012, 2013) argues against argument ellipsis in favor of V-stranding VP-ellipsis. As his evidence shares certain similarities with Hoji's (51), I will discuss his argument first.

(62) is the example Funakoshi (2012) presents as evidence for V-stranding VP-ellipsis.

(62) a. *Taroo wa Hanako to dake asob-e-ru.*
Taroo TOP Hanako with only play-can-PRS
'Taroo can play only with Hanako.' (only > can)

b. *Ziroo-mo [e] asob-e-ru.
   Ziroo-also   play-can-PRS

Intended 'Ziroo also can play only with Hanako.'

In (62a), *Hanako to dake* 'only with Hanako' takes scope over *-e* 'can'. (See Shibata 2013 for detailed discussion on the scope properties of *dake* 'only'.) (62b) indicates that the PP cannot be elided in this context. This, Funakoshi argues, follows if null complements are produced by V-stranding VP-ellipsis. He first hypothesizes that the PP, *Hanako to dake*, moves overtly to the specifier position of FocusP above vP, as in (63).

(63) *Ziroo mo* [Focus [*Hanako to*   *dake*] [vP [PP t vP] asob-e-ru.
   Ziroo also   Hanako with only   play-can-PRS

This accounts for the fact that it takes scope over *-e* 'can'. Since the PP moved out of the vP to be elided, (62b) fails to be generated. If the vP in (63) is elided, only traces disappear as V also moved out of the vP.

Although Funakoshi (2012) assumes that argument ellipsis should allow *Hanako to dake* in (63) to be elided and presents (62) as evidence against it, I think sufficient evidence has been accumulated in support of argument ellipsis as illustrated in the preceding section. Then, the question is why argument ellipsis does not apply to the PP in (63). It is Funakoshi's insight that the PP forms an operator-variable chain as it takes scope over *-e* 'can'. It seems then that argument ellipsis does not apply to items that form operator-variable chains.

Funakoshi (2013) presents additional examples as further evidence for V-stranding VP-ellipsis. One of them is shown in (64).

(64) a. *Taroo wa supeingo ka huransugo o hanasanai.*
   Taroo TOP Spanish or French   ACC speak.not

'Taroo doesn't speak both Spanish and French.' (or > not)

b. *Hanako wa supeingo ka huransugo o   hanasu ga,*
   Hanako TOP Spanish or French   ACC speak though
   Taroo wa [e] *hanasanai.*
   Taroo TOP   speak.not

'Though Hanako speaks Spanish or French, Taroo speaks neither.' (not > or)

As discussed in Goro (2007) in detail, Japanese disjunctive phrases with *ka* 'or' are positive polarity items and take scope over negation, unlike their English counterparts with or. Thus, (64a) is interpreted as in (65).

---

(65) [∃x: x = Spanish or x = French] Taroo does not speak x

Funakoshi (2013) makes an extremely interesting observation that when the disjunctive phrase in (64a) is apparently elided as in (64b), its scope relation with negation reverses. He goes on to point out that the reading (64b) has is expected when the null object is *pro*, roughly meaning 'those two languages'. Then the remaining question is why argument ellipsis does not apply to the disjunctive phrase and yield its wide scope reading over negation. His analysis is that the disjunctive phrase moves out of vP to take scope over negation, and hence, cannot be elided by VP-ellipsis. As the disjunctive phrase is interpreted as in (65), this is another instance that indicates that an item that forms an operator-variable chain is not subject to argument ellipsis.

There are a number of other cases that lead to the same conclusion. One is the well-known fact that interrogative wh-phrases resist argument ellipsis. (66) illustrates this.

(66) a. [CP [TP *Dare ga Haiderabaad e itta] ka] sitte imasu ka.*
   who NOM Hyderabad to went Q   know   Q

'Do you know who went to Hyderabad?'

b. *Iie.* *[CP [TP [e] Siena e itta] ka] nara sitte imasu.*
   no but   Siena to went Q if   know

Intended 'No. But I know the answer if the question is who went to Siena.'

This falls under the generalization if Japanese wh-phrases are interrogative operators as argued in Lasnik and Saito (1984), for example. Hoji's (1998) example in (51) also seems to instantiate the generalization. A simpler example in (67) suffices to illustrate this point.

(67) a. *Taroo to Hanako ga betubetu no gakusei o suisensita.*
   Taroo and Hanako NOM separate GEN student ACC recommended

'Taroo and Hanako recommended different students.'

b. *Ziroo to Akiko mo* [e] *suisensita.*
   Ziroo and Akiko also   recommended

Intended 'Ziroo and Akiko also recommended different students.'

The LF of (67b) would be roughly as in (68).[10]

---

10 See Carlson (1987) for the semantics of *same* and *different*. He argues that *different*, in its internal reading, implies distinct eventualities. Hence, (68) has two sentences, one with Ziroo and the other with Akiko as the subject.

(68) [∃x, y: x, y students and x ≠ y] Ziroo recommended x and Akiko recommended y

If *betubetu no gakusei* 'separate GEN student' forms an operator-variable relation in this way, it is not surprising that it cannot be elided.

The discussion so far suggests that argument ellipsis does not apply to a phrase that forms an operator-variable chain.[11] In the remainder of this subsection, I will argue that this follows if elided arguments are interpreted by LF-copying as proposed in Oku (1998) and Shinohara (2006).

Let me first introduce Shinohara's argument for the LF-copying analysis. She first notes that a complement CP can be elided as expected, as shown in (69).

(69) a. *Hanako wa* [CP [TP *zibun no teian ga saiyoosareru*]
Hanako TOP self GEN proposal NOM adopt.PASS.PRS
to] *omotte iru ga*, *Taroo wa* [CP *e*] *omotte inai*.
COMP think though Taroo TOP think.not

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

b. *Taroo ga* [CP [TP *Hanako ga sono hon o katta*] *to*]
Taroo NOM Hanako NOM that book ACC bought COMP
itta si, *Ziroo mo* [CP *e*] *itta*.
said and Ziroo also said

'Taroo said that Hanako bought the book, and Ziroo also said that she bought it.'

Then, she points out that scrambling of an element out of the target CP blocks argument ellipsis. Her examples are given in (70).

(70) a. *[Hon o]ᵢ Taroo wa* [CP [TP *Hanako ga tᵢ katta*] *to*]
book ACC Taroo TOP Hanako NOM bought COMP
itta si, [zassi o]ᵢ *Ziroo wa* [CP *e*] *itta*.
said and magazine ACC Ziroo TOP said

Intended 'Taroo said that Hanako bought a book, and Ziroo said that she bought a magazine.'

---

[11] Takahashi's (2008) example (48) from Section 2.3 shows that quantified DPs such as *hotondo no sensei* 'most teachers' can be elided. This indicates that those DPs need not be subject to QR, a conclusion drawn by Takahashi on independent grounds. See Takahashi (2008) for discussion on the elidability of quantified DPs as well as important observations on the parallelism constraint imposed on argument ellipsis.

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b. **[Sono hon o]ᵢ Taroo wa* [CP [TP *Hanako ga tᵢ katta*]
that book ACC Taroo TOP Hanako NOM bought
to] *itta si*, [sono hon o]ᵢ *Ziroo mo* [CP *e*] *itta*.
COMP said and that book ACC Ziroo TOP said

Intended 'Taroo said that Hanako bought the book, and Ziroo also said that she bought it.'

This is surprising, Shinohara states, if PF deletion is responsible for argument ellipsis. (71) shows that nothing blocks PF-deletion to derive the ungrammatical (70b).

(71) [Sono hon o]ᵢ *Taroo wa* [CP [TP *Hanako ga tᵢ katta*] *to*] *itta si*,
that book ACC Taroo TOP Hanako NOM bought COMP said and
[sono hon o]ᵢ *Ziroo mo* [CP [TP *Hanako ga tᵢ katta*] *to*] *itta*.
that book ACC Ziroo TOP Hanako NOM bought COMP said

Another fact Shinohara (2006) observes is that the source of the ungrammaticality of (70b), for example, is not the scrambling in the first conjunct but that in the second, which contains the ellipsis site. Thus, (72), with scrambling in the first conjunct, is perfectly grammatical.

(72) [Sono hon o]ᵢ *Taroo wa* [CP [TP *Hanako ga tᵢ katta*] *to*]
that book ACC Taroo TOP Hanako NOM bought COMP
itta si, *Ziroo mo* [CP *e*] *itta*.
said and Ziroo TOP said

'Taroo said that Hanako bought the book, and Ziroo also said that she bought it.'

This is an interesting example because the elided CP is not identical to its antecedent as shown in (73).

(73) [Sono hon o]ᵢ *Taroo wa* [CP [TP *Hanako ga tᵢ katta*] *to*] *itta*
that book ACC Taroo TOP Hanako NOM bought COMP said
si, *Ziroo-mo* [CP [TP *Hanako ga sono hon o katta*] *to*] *itta*.
and Ziroo-TOP Hanako NOM that book ACC bought COMP said

Shinohara (2006), then, argues that (70) and (72) constitute evidence that argument ellipsis is interpreted by LF-copying. LF-copying is a process that copies an LF object from the preceding discourse into an ellipsis site. (See Williams 1977 for an LF copying analysis of VP-ellipsis and Chung, Ladusaw and McCloskey 1995 for an LF copying analysis of sluicing.) In (70b), for example, the LF of the embedded CP in the first conjunct is copied into the embedded CP position in the second conjunct.

Here, it is argued in Saito (1969) and Oka (1991), among others, that long-distance scrambling is semantically-vacuous and is subject to total reconstruction at LF. The contrast between (74b) and (75b) is the evidence Oka (1991) presents for the hypothesis.

(74) a. *Dareka ga daremo o sonkeisite iru.*
someone NOM everyone ACC respect
'Someone respects everyone.' (someone > everyone)

b. [*Daremo o*]i *dareka ga t*i *sonkeisite iru.*
everyone ACC someone NOM respect
'Someone respects everyone.' (everyone > someone OK)

(75) a. *Dareka ga* [CP [TP *Taroo ga daremo o sonkeisite iru*]
someone NOM   Taroo NOM everyone ACC respect
to] itta.
COMP said
'Someone said that Taroo respects everyone.' (someone > everyone)

b. [*Daremo o*]i *dareka ga* [CP [TP *Taroo ga t*i *sonkeisite iru*]
everyone ACC someone NOM   Taroo NOM respect
to] itta.
COMP said
'Someone said that Taroo respects everyone.' (someone > everyone)

As Japanese is a scope-rigid language, the strongly preferred reading of (74a) is the one in which the subject takes wide scope over the object. It was demonstrated by Kuroda (1971) that clause-internal scrambling of the object as in (74b) allows the object to take wide scope. What Oka (1991) points out is that long scrambling of the object as in (75b) lacks this effect on scope relations. Thus, the scrambled object, *daremo o* 'everyone ACC', cannot take scope over the matrix subject despite the fact that it is in a position that c-commands the subject. He argues that this follows if the scrambled object is reconstructed at LF to a position within the CP it originated from.

Let us now consider the LF-copying analysis of (70b), repeated below as (76), with this background.

(76) *[Sono hon o]i [Taroo wa [CP [TP Hanako ga t*i *katta] to]*
that book ACC Taroo TOP   Hanako NOM bought COMP
itta si, [sono hon o]i [Ziroo mo [CP e] itta.
said and that book ACC   Ziroo TOP   said
Intended 'Taroo said that Hanako bought the book, and Ziroo also said that she bought it.'

Sono hon o 'that book ACC' in the first conjunct, by hypothesis, is reconstructed to a position within the embedded CP at LF. If the reconstruction site is the object position, the LF of the embedded CP will be as in (77).

(77) [CP [TP *Hanako ga sono hon o katta] to]*
Hanako NOM that book ACC bought COMP
'that Hanako bought the book'

When this CP is copied into the ellipsis site in the second conjunct, (78) obtains.

(78) *[sono hon o]i [Ziroo mo [CP [TP Hanako ga sono hon o*
that book ACC Ziroo also   Hanako NOM that book ACC
katta] to] itta
bought COMP said
Lit. 'the book, Ziroo said that Hanako bought the book.'

This is illicit as it contains two instances of *sono hon o* 'that book ACC', and the first fails to receive a theta-role.

Note that if (77) is copied into the ellipsis site of (72), the result is well formed as shown in (79).

(79) *Ziroo mo [CP [TP Hanako ga sono hon o katta] to] itta*
Ziroo also   Hanako NOM that book ACC bought COMP said
'Ziroo said that Hanako bought the book.'

Thus, the LF-copy analysis, Shinohara (2006) argues, correctly accounts for the ungrammaticality of (70) as well as the grammaticality of (72).

Given this LF-copy analysis, it follows that an item that forms an operator-variable chain is not subject to argument ellipsis. Recall that argument ellipsis applies only to arguments and locative/temporal phrases. Then, LF-copying can insert phrases only in those positions. Let us consider how LF-copying applies to (66), repeated below as (80).

(80) a. [CP [TP *Dare ga Haiderabaado e itta] ka] sitte imasu ka.*
who NOM Hyderabad   to went Q know Q
'Do you know who went to Hyderabad?'

b. *Iie, *[*Demo [CP [TP [e] Siena e itta] ka] nara sitte imasu.*
no but   Siena to went Q if know
Intended 'No. But I know the answer if the question is who went to Siena.'

I assumed above that Japanese interrogative wh-phrases are operators. The assumption is more precisely that a wh-phrase is an operator and a variable at the same time and hence is interpreted at two positions, as illustrated with an English example in (81).[12]

(81) a. *Who did Mary see?* (who = [[for which x: x a person], x]

b. [[for which x: x a person], x] Mary saw [[for which x: x a person], x]

c. [[for which x: x a person], *x*] Mary saw [[for-which-x:-x-a-person], *x*]

The wh-movement in (81a) copies the wh-phrase at Spec, CP as in (81b). The operator part is interpreted at the landing site and the variable part at the initial site as in (81c). When this is applied to (80a), the LF of the embedded CP is as in (82).

(82) [for which x: x a person] x went to Hyderabad

If the operator is copied into the ellipsis site in the embedded CP in (80b), (83a) obtains.

(83) a. [for which x: x a person] went to Hyderabad

b. x went to Hyderabad

This makes no sense as an operator occurs in an argument position. On the other hand, (83b) is derived if the variable x is copied into the subject position. As x is a free variable, this cannot be interpreted properly. Thus, LF-copying fails to produce a legitimate structure in (80b) precisely because the antecedent of ellipsis is an operator-variable chain.

This analysis extends to Funakoshi's (2012, 2013) examples in (62) and (64) as well as to examples like (67) discussed by Hoji (1998). I will illustrate this with (64), repeated below as (84).

(84) a. *Taroo wa supeingo ka huransugo o hanasanai.*
Taroo TOP Spanish or French ACC speak.not
'Taroo doesn't speak both Spanish and French.' (or > not)

b. *Hanako wa supeingo ka huransugo o hanasu ga,*
Hanako TOP Spanish or French ACC speak though
Taroo wa [e] hanasanai.
Taroo TOP speak.not
'Though Hanako speaks Spanish or French, Taroo speaks neither.' (not > or)

As noted above, the disjunctive phrase in (84a) takes scope over negation. Suppose then that a disjunctive phrase in a negative sentence must move as an operator in order to escape the scope of negation. In this case, the disjunctive phrase must be an operator and a variable at the same time just as in the case of wh-movement. The LF of the first clause in (84b), which does not contain negation, is as in (85a) or (85b).

(85) a. Hanako speaks [Spanish or French]

b. [[∃x: x = Spanish or x = French], *x*]
Hanako speaks [[∃x:-x-=-Spanish-or-x-=-French], *x*]

The object of (85a) cannot be copied into the ellipsis site in (84b) because the disjunctive phrase then falls within the scope of negation. Hence, only (85b) needs to be considered. (86a) obtains when the quantifier is copied into the ellipsis site, and (86b) when the variable is copied into the position.

(86) a. Taroo does not speak [∃x: x = Spanish or x = French]

b. Taroo does not speak x

Neither is a proper representation.

3.3 Further Issues with Sluicing and N'-ellipsis

I will discuss two more descriptive issues before I conclude this section, but without a definite conclusion. One concerns sluicing. It was shown in Section 2 that the examples that initially motivated VP-ellipsis and sluicing in Japanese can be reanalyzed as instances of argument ellipsis. This leaves us with no evidence for VP-ellipsis or sluicing in Japanese. But it does not show that sluicing, for example, does not exist in the language. Given this, Takita (2012) presents evidence that Japanese has sluicing in addition to argument ellipsis. I will first introduce his evidence. The second issue has to do with the position of classifier phrases in a nominal projection. Saito and Murasugi (1990) hypothesized that they are adjuncts, but Watanabe (2010) argues that they are specifiers and can be remnants with N'-ellipsis. I will briefly discuss this proposal in the latter part of this subsection.

Recall Saito's (2004) proposal to analyze examples like (87a) as instances of argument ellipsis applied to the subject of cleft sentence as in (87b).

(87) a. *Taroo wa [cp naze zibun ga sikarareta ka] wakatte inai.*
Taroo TOP why self NOM scold.PASS.PST Q understand
ga,
Hanako wa [cp naze (da) ka] wakatte iru.
though Hanako TOP why is Q understand
'Though Taroo doesn't understand why he was scolded, Hanako understands why he/she was scolded.'

b. *Hanako wa* [CP [TP [TP Op₁ [C' [TP zibun ga t₁ sikarareta] self NOM scold.PASS.PST
Hanako TOP
no]] ga naze₂ (da)] ka] wakatte iru.
COMP NOM why is Q understand
Lit. 'Hanako understands why it is that self was scolded.'

If the analysis is correct, (87a) no longer provides evidence for sluicing in Japanese. However, Takita (2012) presents similar examples that cannot be analyzed this way and argues that they do constitute evidence for sluicing; I will present his argument in a slightly modified form.

One of his examples is given in (88).

(88) *Taroo wa* [CP [TP PRO dokoka e ikoo] to] omotte iru
Taroo TOP somewhere to go.will COMP think
ga, [CP doko e (??da) ka] mayotte iru.
though where to is Q cannot.decide
'Though Taroo thinks that he will go somewhere, he cannot decide where.'

(88) differs from (87a) in one important respect. The first sentence of (88) has a control structure and the embedded clause lacks tense. Takita states that the copula *da* is illicit in (88), and it certainly makes the example degraded in contrast with (87a). The sentence with *da* roughly has the same status as (89) with an overt pro-noun in the subject position.

(89) ??.... [CP sore ga doko e (da) ka] mayotte iru.
It NOM where to is Q cannot.decide
'.... he cannot decide where it is.'

Then, (88) with *da* seems to have a pro subject.

The remaining question is why (88) is perfect without *da*. It cannot have a cleft structure as in (87) because *da* can always occur in a cleft sentence. In addition, the corresponding cleft sentence in this case is totally ungrammatical as shown in (90).

(90) *.... [CP [TP [CP ikoo no] ga doko e (da)] ka] mayotte iru.
will.go COMP NOM where to is Q cannot.decide
'.... he cannot decide where it is that the will go.'

This is because the complementizer *no*, which heads the CP subject in clefts, only takes a clausal complement with tense morphology, as shown by Matsumoto (2010), and *ikoo* 'will go' lacks tense. Takita (2012) concludes then that (88) without *da* should be analyzed as an example of sluicing as in (91).

(91) .... [CP [doko e]₁ [IP ... pro-t₁ ikoo] ka] mayotte iru.
where to will.go Q cannot.decide
'.... he cannot decide where (he will go).'

Takita (2012) provides an additional piece of evidence for his sluicing analysis. It was noted in the preceding section that for examples like (87), the remnant need not be a wh-phrase. Thus, (92) is perfectly grammatical.

(92) *Taroo wa dokoka e itta ga, boku*
Taroo TOP somewhere to went though I
wa [CP Tookyoo e ka(dooka)] siranai.
TOP Tokyo to whether know.not
'Taroo went somewhere, but I don't know whether it is to Tokyo that he went.'

On the other hand, examples like (88) requires a wh-phrase as the remnant, as (93) shows.

(93) ??*Taroo wa* [CP [TP dokoka e ikoo] to] omotte iru ga,
Taroo TOP somewhere to go.will COMP think though
[CP Tookyoo e ka(dooka)] mayotte iru.
Tokyo to whether cannot.decide
'Though Taroo thinks that he will go somewhere, he cannot decide whether it is to Tokyo that he will go.'

This is precisely what is expected if (88) is an example of sluicing. As was discussed in Section 2, sluicing requires a wh-phrase in Spec, CP.

Based on this discussion, Takita (2012) concludes that the theoretical consequences that Takahashi (1994) draws can be maintained as such. In particular, Japanese must have optional wh-movement, that is, scrambling of a wh-phrase to its scope position in the language must count as wh-movement. Although further investigation is necessary to confirm Takita's sluicing analysis, there is indirect evidence for it. It was argued in the preceding subsection that a wh-phrase cannot be elided by argument ellipsis because it is an interrogative operator. This analysis, if correct, reinforces the conclusion of Takahashi (1994) and Takita (2012). If a wh-phrase is an interrogative operator, its movement to the scope position should establish an operator-variable chain and count as wh-movement. And if Japanese has optional wh-movement, it is not surprising at all that it has sluicing.

Let us now turn to Watanabe's (2010) proposal that classifier phrases occupy a specifier position in a nominal projection. As discussed in Section 2.1, Saito and Murasugi (1990) argued that classifier phrases are adjuncts because examples like (19d), repeated below as (94), are ungrammatical.

(94) *Taroo wa issyuukan ni san-satu no hon o yomu
Taroo TOP one.week in three-volume GEN book ACC read
go, Hanako wa [go-satu no _] o yomu,
though Hanako TOP five-volume GEN ACC read
'Though Taroo reads three books per week, Hanako reads five.'

If go-satu no 'five-volume GEN' is an adjunct, it cannot move to Spec, DP to create a legitimate configuration for N'-ellipsis. Watanabe points out that examples of this kind are grammatical without the genitive Case on the remnant, as exemplified in (95).

(95) Taroo wa [san-satu no hon] o kat, Hanako
Taroo TOP three-volume GEN book ACC buy.and, Hanako
wa [go-satu _] o katta.
TOP five-volume ACC bought
'Taroo bought three books, and Hanako bought five.'

He argues then that the classifier phrase, go-satu 'five-volume', is in the specifier position of the Q(uantifier) head, as proposed in Watanabe (2006), and hence, licenses the ellipsis of the complement of Q.

Watanabe's proposal is that the structure of Japanese nominal phrases is richer than assumed in Saito and Murasugi (1990), and clearly has a number of important implications. At the same time, there seem to be a few issues that need to be addressed to confirm his conclusion. The first is whether the object of the second clause in (95) refers to books of certain quantity or to the quantity of books. It is known that the object refers to an amount in examples like (96).

(96) John weighs 150 lbs.

If the object of the second clause in (95) simply refers to a quantity, then there is a possibility that nothing is elided. As far as I can see, it is not easy to tease apart those two readings. But examples of the following kind with mass nouns may provide some information:

(97) a. Taroo wa go-rittoru no biiru no soko o motte
Taroo TOP five-liter GEN beer GEN bottom ACC holding
hakobi, Hanako wa roku-rittoru ??(no biiru) no soko
carry.and Hanako TOP six-liter GEN beer GEN bottom
o motte hakonda.
ACC holding carried
'Taroo held the bottom of five liters of beer and carried it, and Hanako held the bottom of six liters of beer and carried it.'

b. Taroo wa ni-rittoru no gyuunyuu no huta o ake,
Taroo TOP two-liter GEN milk GEN cap ACC open.and
Hanako wa san-rittoru ??(no gyuunyuu) no huta o aketa.
Hanako TOP three-liter GEN milk GEN cap ACC opened
'Taroo took off the cap of two liters of milk, and Hanako took off the cap of three liters of milk.'

(97a) and (97b) are marginal at best with the omission of biiru 'beer' and gyuunyuu 'milk' respectively. It seems that this is because a quantity does not have a bottom or a cap. If this is the case, further investigation is necessary to establish that a classifier phrase can serve as a remnant for ellipsis.

The second issue has to do with the analysis of the genitive no. In the examples of N'-ellipsis considered in Saito and Murasugi (1990), the remnant in Spec, DP occurs with no as in (18b), repeated below as (98).

(98) Rooma no hakai wa [Kyooto no _] yorimo hisan datta.
Rome GEN destruction TOP Kyoto GEN than misery was
'Rome's destruction was more miserable than Kyoto's.'

On the other hand, according to Watanabe's (2010) analysis, a classifier phrase in Spec, QP does not carry no when the complement of Q is elided, as can be seen in (95). This implies that no on arguments is different from that on classifier phrases. Watanabe addresses this point and argues that no on arguments is Case whereas that on classifier phrases is a linker that is inserted only when an overt nominal projection follows. This accounts for the presence of no in the first clause and its absence in the second clause of (95). Watanabe presents a conceptual argument and a piece of empirical evidence for this proposal. First, according to the traditional Case theory, Case is required only for DP arguments. Hence, it is only natural to suppose that no on classifier phrases is something else. Secondly, there are examples like (99) where it is difficult to analyze no as Case.

(99) Taroo ga syuzinkoo no monogatari
Taroo NOM hero Linker story
'a story in which Taroo is the hero'

One way to analyze this example is that the copula after syuzinkoo 'hero' is omitted and as a result, the noun happens to be directly followed by monogatari 'story'. Watanabe argues that no as a linker is inserted in this case.

Although a uniform analysis of the prenominal no is pursued in Bedell (1972), Kitagawa and Ross (1982), and Murasugi (1991), among others, proposals have been made to distinguish its two types. For example, Okutsu (1974) discusses examples

similar to Watanabe's (99) and proposes that *no* in this case is the prenominal form of the copula *da* 'be, is'. His analysis is based on examples like those in (100).

(100) a. [IP Taroo ga kaityoo de aru] gakkai
Taroo NOM president be be.PRS academic society
'an academic society of which Taroo is the president'

b. *[IP Taroo ga kaityoo da] gakkai
Taroo NOM president be academic society
Intended 'an academic society of which Taroo is the president'

c. [IP Taroo ga kaityoo no] gakkai
Taroo NOM president be academic society
'an academic society of which Taroo is the president'

Okutsu first notes that the copula *da* cannot occur prenominally as shown in (100b). Since *no* is employed in this context as in (100c), he proposes that *da* is the conclusive form of the copula and its prenominal form is *no*. (100c) can be paraphrased as in (100a), which employs the preverbal form of the copula *de*. As the main predicate of the relative clause is not the copula but *aru* 'be/exist.PRS', no problem arises in this case.

Whether one pursues Okutsu's analysis or Watanabe's, a remaining issue is where the line should be drawn between genitive Case and the copula/linker. Let me illustrate the problem with PP arguments. The examples in (101) seem to be instances of N'-ellipsis with PP remnants.

(101) a. [Oya e no izon] wa yoi ga,
parent on GEN dependence TOP good though
[sensei e no __] wa yokunai.
teacher on GEN TOP good.not
'Dependence on parents is permissible, but dependence on teachers is not.'

b. [Taroo kara no sien] mo [Hanako kara no __]
Taroo from GEN support also Hanako from GEN
mo kokorozuyokatta.
also encouraging.PST
'Support from Taroo and support from Hanako were both encouraging.'

If these are indeed examples of N'-ellipsis, they show that PP arguments can move to Spec, DP and serve as remnants for N'-ellipsis. This implies that the *no* on those PPs is not the prenominal copula. If it were, those PPs should be relative clauses and should be unable to move to Spec, DP. Further, it is not a linker either because if it

were, it should not appear on the PP remnants. On the contrary, *no* is required on these PP remnants. Then, the *no* on PP arguments should be genitive Case. Thus, the distribution of genitive *no* is wider than the simple version of the Case Filter, for example, predicts. The precise distribution of the genitive *no* needs to be examined and its explanation must be pursued further.

Although I will leave the questions raised in this subsection open, it should be clear that Takita's (2012) argument for sluicing and Watanabe's (2010) proposal on classifier phrases both may have important consequences. As noted above, if Japanese indeed has sluicing, then it must have wh-movement. Watanabe's proposal may lead to further understanding of the Japanese nominal structure and consequently of ellipsis within nominal projections.

4 Toward an Explanation

The discussion so far suggests that Japanese has argument ellipsis, N'-ellipsis, and also sluicing if Takita (2012) is correct. Explanation for these phenomena must be sought and the theoretical consequences must be investigated. In this section, I will first suggest an analysis for argument ellipsis and try to explain why it is observed in Japanese and Korean, but not, for example, in English. In the second part, I will raise the possibility to derive the generalization in (10), repeated below as (102), from Chomsky's (2013, 2014) labeling algorithm.

(102) Ellipsis: The complement of a functional category F (D, C, or T) can be elided only when F has a specifier, as illustrated below.

$$\text{FP} \rightarrow \text{XP}, \ \text{F}' \rightarrow \text{F}, \ \text{YP}$$

The discussion in this section, like that in the preceding section, is exploratory. It raises more questions than it solves, but I hope it serves to clarify the kinds of theoretical issues that arise in the investigation of ellipsis in Japanese.

4.1 Argument Ellipsis and the (Absence of) φ-feature Agreement

Argument ellipsis is observed in Japanese and Korean but not in English, as the contrast between (103) and (104) shows.

(103) a. *Taroo wa* [DP *zibun no tomodati*] *o turete kita.*
Taroo TOP self GEN friend ACC brought
'Taroo brought his friend.'

b. *Demo, Hanako wa* [DP e] *turete konakatta.*
but Hanako TOP bring_not.PST
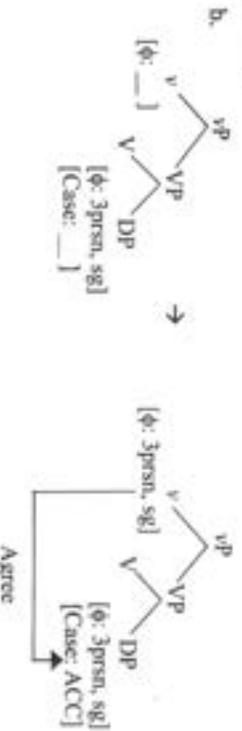'But Hanako didn't bring her friend.'

(104) a. *John brought* [DP *his friend*].

b. **But Mary didn't bring* [DP e].

It is proposed in Saito (2007) that this difference is related to the presence/absence of φ-feature agreement in those languages. In this subsection, I will briefly present this analysis as well as further issues it raises. As the analysis crucially assumes Chomsky's (2000) proposal on φ-feature and Case valuation, I will first briefly go over this proposal.

Chomsky (2000) maintains that Case is closely tied with φ-feature agreement. For example, the subject provides the φ-features of T (subject-verb agreement) and T specifies the Case of the subject as nominative. φ-feature agreement is nothing but the occurrence of the φ-features of a particular DP on a functional head. Then, it is necessary to specify how a functional head acquires φ-features from a DP. Chomsky proposes that this is accomplished by Agree as illustrated in (105b) for the v in (105a).

(105) a. *Mary saw him.*

b.

[φ-tree diagram with Agree arrow]

As the DP is copied from the LF of (104a), its Case feature is already valued.[13] Then, v fails to enter into Agree relation with the copied DP because of the activation condition. Consequently, the φ-features of v cannot be valued and the derivation crashes. This accounts for why argument ellipsis is impossible in English.

Then, how is it possible in Japanese and Korean? It has long been observed that there is no visible φ-feature agreement in these languages, and there has been much work trying to deduce the properties of these languages on the premise that they lack φ-feature agreement. Notably, Kuroda (1988) proposed that the main properties of Japanese such as multiple occurrences of Case, free word order, and the lack of obligatory wh-movement follow from the absence of obligatory agreement. Let us then try to extend this approach. If Japanese and Korean indeed lack (obligatory) φ-feature agreement, then functional categories such as T and v do not (or need not) carry φ-features that require valuation. To take a concrete example, the Japanese/Korean counterparts of (106) have (or can have) v without φ-features. And in this case, nothing goes wrong with the insertion of an object whose Case feature is already valued. As v need not enter into Agree relation with the DP, the activation condition is irrelevant. Thus, Saito (2007) argues that Japanese and Korean allow argument ellipsis precisely because these languages lack φ-feature agreement.[14]

This analysis, if correct, implies that there is a general correlation between argument ellipsis and the absence of φ-feature agreement. This prediction has been examined by Daiko Takahashi and his colleagues, and an interim report is made in

Shinohara's (2006) argument for the LF copying analysis of argument ellipsis was presented in the preceding section. Let us now consider how the analysis would apply to the English (104b), given Chomsky's (2000) proposal on φ-feature agreement and Case. The DP *his friend* from the LF of (104a) is copied into the object position of (104b), as shown in (106).

(106)

[φ-tree diagram with bring, his friend DP]

v comes with φ-features that need to be valued. It searches its domain for a value provider, and enters into Agree relation with the DP it finds as shown in the tree on the right hand. The Agree relation enables v to acquire the values for φ-features, and as a reflection of this, the Case feature of the DP is valued as accusative. One condition that Chomsky imposes on the Agree relation is the activation condition, which states that both the probe (v in (105b)) and the goal (DP in (105b)) must have unvalued features. Then, a DP can supply φ-feature values to functional heads until its Case feature is valued but not afterwards.

Takahashi (2014b). Here, I will briefly discuss the case study with Turkish first presented in Şener and Takahashi (2010).

Turkish allows null arguments in both subject and object positions, but exhibits only subject agreement. Sloppy interpretation is possible with null objects, as shown in (107).

(107) a. *Can* [pro *anne-si*] *ni* *eleştir-di*.
John mother-3SG ACC criticize-PST
'John criticized his mother'

b. *Mete-yse* —— *öv-dü*.
Mete-however praise-PST
'Mete, however, praised her/his mother' (sloppy interpretation possible)

This indicates that argument ellipsis is possible for objects. On the other hand, (108) shows that a null subject of a finite clause resists sloppy interpretation.

(108) a. *Can* [[pro *öner-si*] *nin* *kabul* *ed-il-eceğ-i*] *ni* *düşün-üyor*.
John proposal-3SG GEN accept do-PASS-NM-3SG ACC think-PRS
'John thinks that his proposal will be accepted'

b. *Aylin-se* [_ *redded-il-eceğ-i*] *ni* *düşün-üyor*.
Eileen-however reject-PASS-NM-3SG ACC think-PRS
'Eileen, however, thinks that it will be rejected' (sloppy interpretation not possible)

Then, a null argument in this context must be *pro*.

Şener and Takahashi argue further that the contrast is not a subject-object asymmetry, but the presence/absence of φ-feature agreement is the crucial factor. In order to show this, they examine subjects that do not participate in φ-feature agreement. The ECM subject in (109) is an example of this.

(109) a. *Pelin* [[pro *yeğen-i*] *ni* *lise* *ye* *başla-yacak*] *san-ıyor*.
Pelin niece-3SG ACC high.school DAT start-FUT think-PRS
'Pelin thinks her niece will start high school'

b. *Suzan-sa* [_ *ilkokul* *a* *başla-yacak*] *san-ıyor*.
Susan-however grade.school DAT start-FUT think-PRS
'Susan, however, thinks she/her niece will start grade school'
(sloppy interpretation possible)

As sloppy interpretation is possible in (109b), the example shows that argument ellipsis applies to ECM subjects as predicted. As discussed in Takahashi (2014), it is not always possible to check the prediction straightforwardly. But the basic facts in Turkish support the correlation between argument ellipsis and the absence of φ-feature agreement.

At the same time, it should be noted that the analysis of Saito (2007) is by no means complete. Aside from the fact that it relies crucially on the activation condition, whose status can be questioned, there are two issues that need to be resolved. The first has to do with the distributional similarity of argument ellipsis and *pro*, discussed in Section 3.1. The second concerns the ellipsis of PP and CP arguments. I will briefly discuss them before I close this subsection.

As noted in Section 3.1, argument ellipsis applies to arguments and locative/temporal phrases and hence shows the same distribution as *pro*. Given this, a unified analysis of the two phenomena would be desirable. One possibility is that there is no argument ellipsis after all and the null arguments are uniformly *pro*, as proposed in Hoji (1998). A different possibility is suggested in Saito (2007). The LF copying analysis of argument ellipsis implies that material from the preceding discourse is available in the derivation of a sentence. Thus, in (103), repeated below as (110), *zibun no tomodati* 'self GEN friend' is copied from (110a) into the object position of (110b).

(110) a. *Taroo wa* [DP *zibun no* *tomodati*] *o* *turete kita*.
Taroo TOP self GEN friend ACC brought
'Taroo brought his friend.'

b. *Demo, Hanako wa* [DP *e*] *turete konakatta*.
but Hanako TOP bring.not.PST
'But Hanako didn't bring her friend.'

What Saito (2007) suggests is that *pro* as an LF object can always be copied into a sentence in the same way. The idea is that there is a set of discourse entities that can be used in a derivation, in addition to the LIs in the numeration, and the set includes LF objects from the prior discourse as well as *pro*. The same mechanism of LF copying, then, will be responsible for argument ellipsis and *pro*.

Although this unification of argument ellipsis and *pro* is merely a speculation at this point, it has one advantage. It has been noted that *pro* occurs in two totally different environments: it is licensed by rich agreement in languages such as Italian and Spanish and it appears freely in languages without φ-feature agreement such as Japanese and Korean. The former environment makes sense as rich agreement provides the information that is conveyed by a pronoun. But it has been a mystery why the total absence of φ-feature agreement makes the occurrence of *pro* possible. The approach suggested above provides an answer for this. *Pro*, as an LF object, must

lack unvalued features, and hence, cannot be copied into a position that serves as the target of Agree. Hence, it can only appear in the context where there is no φ-feature agreement.

The second issue has to do with the ellipsis of PPs and CPs. (60), repeated below as (111), and (69a), repeated as (112), show that complement CPs and locative PPs can be elided respectively.

(111) a. *Taroo wa* [ziben no oya no ie ni] sunde iru.
　　 Taroo TOP self GEN parent GEN house in live
　　 'Taroo lives in his parents' house.'

　　 b. *Demo Hanako wa* [e] sunde inai.
　　 but Hanako TOP live.not
　　 'But Hanako doesn't live there/in her parents' house.'

(112) *Hanako wa* [CP [TP ziben no teian ga saiyoosareru]
　　 Hanako TOP self GEN proposal NOM adopt.PASS.PRS
　　 to] omotte iru ga, *Taroo wa* [CP e] omotte inai.
　　 COMP think though Taroo TOP think.not
　　 'Though Hanako thinks that her proposal will be accepted, Taroo doesn't think that it/his proposal will be.'

English contrasts with Japanese and Korean with respect to examples of this kind as well. Thus, the English counterpart of (112) is totally ungrammatical as shown in (113).

(113) *Mary thinks* [CP that [TP her proposal will be accepted]], but John doesn't think [CP e].

The ungrammaticality of (113) poses a problem for the analysis presented above, as long as CPs do not participate in φ-feature agreement. If a CP is not a target of any Agree relation, nothing should prevent its insertion in the ellipsis site of (113). It is conceivable that LF copying of an argument is a marked operation that becomes part of a grammar only with positive evidence. If the ellipsis of argument DPs serves as the positive evidence, a Japanese-speaking child will acquire argument ellipsis. On the other hand, an English-speaking child will never encounter the crucial data and argument ellipsis will not be part of her/his grammar. Although this is a possibility, a more principled account is desirable.

4.2 Deriving the Licensing Condition on N'-ellipsis, VP-ellipsis and Sluicing

The preceding subsection was concerned with why argument ellipsis is possible in Japanese and Korean but not, for example, in English. The theory of ellipsis aims to explain in more general terms why only constituents of specified types can be elided and why ellipsis is possible only in specific configurations. For the former question, it seems that any maximal projection can in principle be elided. Argument ellipsis applies to DPs, CPs, and PPs. And if the approach outlined in the preceding subsection is on the right track, it is observed only in positions that do not participate in φ-feature agreement for an independent reason. N'-ellipsis applies to the NP complement of D, VP-ellipsis to the vP complement of T, and sluicing to the TP complement of C. The targets of ellipsis in these cases are non-argument maximal projections. Then, under the LF copying analysis of ellipsis, it appears that maximal projections constitute coherent LF objects that can be used in a derivation of a sentence. One of the remaining questions is why adjuncts, like the reason phrase in (61), repeated below as (114), cannot be elided.

(114) a. *Watasi wa* [CP *Taroo ga ziben no sippai de*
　　 I TOP Taroo NOM self GEN mistake for
　　 kubi-ni natta to] *kiite iru.*
　　 fired.was COMP hear
　　 'I hear that Taroo was fired because of his own mistake.'

　　 b. *Demo* [CP *Hanako ga* (*[e]) *kubi-ni natta to*] *wa kiite inai.*
　　 but Hanako NOM fired.was COMP TOP hear.not
　　 'But I haven't heard that Hanako was fired.'

I will leave this question, together with many others, for future research. Outstanding with the second question is the generalization in (10) on N'-ellipsis, VP-ellipsis, and sluicing, which is repeated again in (115).

(115) Ellipsis: The complement of a functional category F (D, C, or T) can be elided only when F has a specifier, as illustrated below.

This generalization, if correct, must be explained. As far as I know, Richards (2003) is the only work that attempts this. He proposes a modification of Kayne's (1994) Linear Correspondence Axiom and argues that the generalization follows from the

theory of linearization. In this subsection, I will speculate on an alternative approach, building on his insights. More specifically, I will consider the possibility of deriving (115) from the theory of labeling proposed in Chomsky (2014).

Richards (2003) assimilates (115) with the EPP. This makes sense as both demand that Spec positions be filled. On the other hand, Chomsky (2014) proposes to derive the EPP from the theory of labeling. It seems then only reasonable to try to extend this analysis to (115). But before getting into this discussion, I will briefly go over Chomsky's (2013) proposals on labeling.

Phrase structure is built with the basic and minimum operation Merge, which combines two elements into a constituent. Formally, Merge takes two elements, α and β, and forms their set, $\gamma = \{\alpha, \beta\}$. Required for interpretation is the information on what sort of object γ is, that is, on γ's label. For example, $\gamma = \{\text{verb, noun}\}$ would be interpreted differently depending on whether γ is a verb phrase or a noun phrase. The way in which the label of the object formed by Merge is determined is called the labeling algorithm. Chomsky (2013) lists the three cases in (116) as the possible outcomes of Merge.

(116) a. $\gamma = \{H, \beta P\}$

b. $\gamma = \{\alpha P, \beta P\}$

c. $\gamma = \{H, H\}$

In (116a), Merge applies to a head and a phrase. This case is straightforward: As the search into γ directly yields the unique head H, H provides the label for γ. On the other hand, (116b) and (116c) are problematic because there is no asymmetric relation between the elements of γ.

Chomsky considers the derivation of TP in order to examine how the label is determined when Merge applies to two phrases as in (116b).

(117)
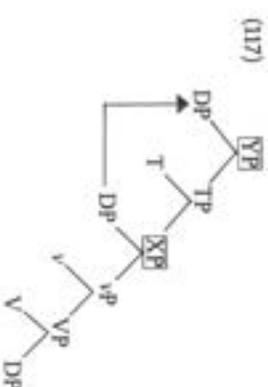
The derivation proceeds in a bottom-up fashion, and the structure in (116b) arises first when the external argument DP merges with vP. In this case, the DP eventually moves out of XP. Consequently, vP is the only element that XP properly contains,

and Chomsky proposes that vP provides the label of XP for this reason. Although the movement of the external argument DP enables XP to be labeled, it creates the structure of (116b) at the landing site when the DP internally merges with TP. Chomsky notes that this is a special configuration because the DP and (the label of) TP share the same set of φ-features due to φ-feature agreement. He proposes then that the label of YP is determined as <φ, φ> on the basis of this feature sharing. Another instance of labeling by feature sharing is observed when a wh-phrase merges with a CP to assume its scope position. The wh-phrase and (the label of) the CP share a question feature, say, Q, and hence, the newly created constituent is labeled as <Q, Q>.

Chomsky (2014) extends this analysis to explain the EPP and the ECP effects. Here, I will go over his explanation for the EPP, which requires that T have a specifier. Chomsky assumes that the EPP does not hold in null subject languages like Italian and Spanish. This implies that the structure in (118a) is allowed in those languages but not in EPP languages, including English.

(118) a.

b.

The labeling algorithm discussed so far allows this structure: T is the unique head in XP and hence determines the label of XP. The fact that (118a) is illicit in EPP languages suggests that T is defective in those languages. That is, T is weak so that it cannot provide a label as a head. Then, T must have a feature-sharing specifier as in (118b) so that the whole structure can be labeled. In this case, YP is labeled as <φ, φ> due to the φ-feature sharing. As far as I can see, the status of XP in (118b) is somewhat unclear. It is possible that it need not have a label because it is an "intermediate projection." But Chomsky suggests that the feature sharing makes a defective (weak) T in EPP languages non-defective (strong). Then, T provides the label for XP. The main part of Chomsky's (2013, 2014) proposal can be summarized as in (119).

(119) a. In $\gamma = \{H, \beta P\}$, H provides the label for γ if H is strong.

b. In $\gamma = \{\alpha P, \beta P\}$, if search into αP and βP yields heads that share the feature f, then the label of γ is <f, f>.

---

15 Labeling by feature sharing provides an answer for why φ-feature agreement exists in languages. That is, φ-feature agreement is necessary so that a TP, for example, can be properly labeled. Then, a question arises with respect to labeling in languages like Japanese, which lack φ-feature agreement. This problem is discussed with a possible solution in Saito (2014).

Let us now consider the generalization in (115) with this background. It states that a functional head requires a specifier when its complement is elided. Then, Chomsky's (2014) analysis of the EPP can be extended to these cases on the assumption that a functional head fails to provide a label without a specifier in the context of ellipsis. In the remainder of this section, I will suggest two approaches to pursue this.

The first relies on another idea of Richards (2003). He proposes that the internal structure of an elided constituent is invisible and hence the constituent counts as a head for the purpose of linearization. Translating this idea into the LF copying analysis of ellipsis, it can be hypothesized that a constituent that enters the structure by LF copying counts as a head for the purpose of labeling. Then, the illicit case of sluicing in (9b), repeated in (120), is accounted for.

(120) *John denied that he cheated, but I believe [CP that [TP he cheated]].

The CP with ellipsis has the structure (C, H) and hence fails to be labeled. The grammatical (7b), repeated in (121), also receives an account with a slight adjustment.

(121) John knows [CP which girl [TP Mary likes]], but he doesn't know [CP which boy [TP she likes]].

The CP with ellipsis has the structure in (122).

(122)
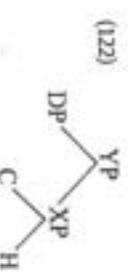
The search into XP yields two heads, C and H. On the assumption that both heads are visible in this situation, the feature sharing of C and (the label of) DP provides the label <Q, Q> for YP. I assume that XP need not be labeled, being an "intermediate projection," or feature sharing picks out C as the provider of label for XP. This analysis extends to N'-ellipsis if there is an appropriate feature sharing between the genitive DP and the head D, possibly the feature [genitive].

There is another possibility that follows Chomsky's (2014) analysis of the EPP more closely. Chomsky's proposal was that T requires a specifier in EPP languages because T is weak and cannot provide a label by itself. Then, as functional heads require a specifier in the context of ellipsis, let us assume that all functional heads are weak except T in null subject languages. This yields the generalization in (115). Let us consider the sluicing examples in (120) and (121) again for illustration. (120) is ungrammatical because the sluicing CP with ellipsis has the structure in (123a) and XP fails to be labeled, C being weak.

(123) a.

b.
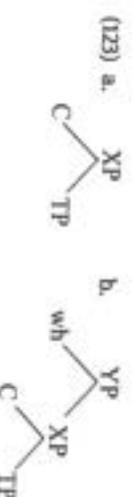
On the other hand, the CP in (121) is successfully labeled as illustrated in (123b). As there is a feature sharing of Q between the wh and C, YP is labeled as <Q, Q>. This analysis necessitates a reconsideration of simple examples like (124) without ellipsis.

(124) John thinks [CP that [TP Mary solved the problem]].

The embedded CP in this example has the structure in (123a). The example then must be distinguished from (120) with ellipsis. This can be achieved under the LF copying analysis of ellipsis if the embedded CP in (124) is labeled through feature sharing between C and T in the configuration in (125).

(125)
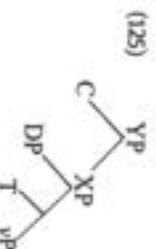
There are many possibilities for the relevant feature shared by C and T. For example, Chomsky (2008) proposes that unvalued features originate in phase heads, and T's φ-features are inherited from C. Then, C and T may share φ-features. For languages without φ-feature agreement, it is possible that T inherits the ability to value nominative Case from C. It is also known that C and T have a close selectional relation. The C that selects for a finite TP whereas for selects for a non-finite TP. This may mean that C values the [±finite] feature of T. Here, I assume without choosing among these possibilities that C and T share the relevant feature f because it originates in C and T obtains it.

The next question to be addressed is how this feature sharing leads to the labeling of YP in (125). This becomes possible if the labeling algorithm is stated in the slightly different form in (126), which I believe is still consistent with the proposals in Chomsky (2014).

(126) a. In γ = {α, β}, if there is a unique head α and α is strong, α provides the label for γ.

b. Otherwise, search into α and β in order to locate heads. If the yielded heads a and b share a feature f of a specified type, then the label of γ is <f, f>.[16]

---

16. Here I assume crucially that (126b) applies to cases where one of a and β is a weak head and that a and b's depth of embedding within a and β need not be identical.

Given that C is weak, (126a) is inapplicable to YP in (125). Then, heads must be searched in C and XP, according to (126b). Search into C immediately yields C. Tacit in the discussion above is that when search encounters {α, β} where α and β are both phrases, it proceeds to look into both α and β. Then, search into XP yields D and T. If either of D and T can count in this case, as assumed above, then YP can be labeled <d, f> on the premise that C and T share this feature. Note that in the context of sluicing, XP is copied into the structure from the prior discourse. Hence, its T does not obtain the feature f from the structure XP is copied into. As a result, there is no sharing of f between C and T, and YP fails to be labeled.

This line of analysis can be applied to the contrast in (127) with N'-ellipsis if D values a feature of N.

(127) a. [_DP the [_NP destruction of the city]]

b. *[_DP the [_NP *destruction of the city*]]

It is proposed in Chomsky (1986b) that N assigns inherent genitive Case to its complements. Let us assume for concreteness that N inherits the genitive feature from D. Then, the structure of (127a) is as in (128).

(128)

[genitive]
```
        XP
       /  \
      D    NP
 [genitive]/ \
          N   PP
       [genitive]
```
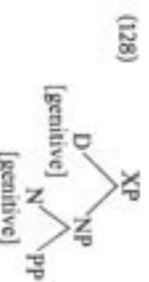
(126b) applies for the labeling of XP because D, by hypothesis, is weak. The search into D and NP yields the heads D and N, and XP is labeled as <genitive, genitive>. In the context of N'-ellipsis, NP is copied from the prior discourse. Consequently, the genitive feature of its head N is not inherited from the D, and feature sharing fails to obtain. In this case, labeling is possible only through the feature sharing of D and its specifier. And the desired feature sharing obtains if the [genitive] of the specifier is valued by D.

N'-ellipsis in Japanese can be analyzed in basically the same way. Recall that DPs and PPs within projections of N and D appear with genitive Case in the language. The relevant examples in (18) are repeated in (129) below.

(129) a. *Hanako no   Tookyoo de no   kabu no   torihiki*
        Hanako GEN Tokyo in GEN stock GEN dealing
   'Hanako's dealing of stocks in Tokyo'

b. *Taroo no   san-kai   no   muitmon de   no   Yooroppa*
   Taroo GEN three-time   GEN no,penny with GEN Europe
   e no ryokoo
   to GEN trip
   'Taroo's three trips to Europe with no money'

It was entertained in Section 2 that genitive in Japanese is a contextual Case that is inserted as in (130).

(130) [_D DP/PP β] → [_D DP/PP *no* β], where α and β are projections of N or D.

Here, it can be assumed that D has the feature to trigger genitive Case insertion and it is inherited by N. Then, there is a feature sharing between D and N. In the case of N'-ellipsis, the NP is copied from prior discourse and the head N already inherited the feature from a distinct D. Hence, there is no feature-sharing between D and N in this case.

The analysis just outlined predicts correctly that a weak T requires a specifier with or without the ellipsis of its complement. According to this analysis, C and D can appear without a specifier when and only when they are in feature sharing relation with the heads of their complements. Further, the feature sharing arises because C and D are phase heads that value the features of their complements or transfer features to them. This situation never arises with T as T is not a phase head. It follows then that T must always have a specifier so that "its projection" can be labeled through feature sharing between T and its specifier.

5 Conclusion

In this chapter, I first surveyed the arguments for N'-ellipsis, VP-ellipsis, sluicing, and argument ellipsis in Japanese. Argument ellipsis was proposed in place of VP-ellipsis in Oku (1998) and Kim (1999), and a supporting argument for it in Saito (2004) raised doubts on sluicing. Further descriptive issues on ellipsis in Japanese were discussed in Section 3. I introduced Hoji (1998) and Funakoshi's (2012, 2013) evidence against argument ellipsis and argued that it supports the LF copying analysis of argument ellipsis instead. Takita's (2012) new evidence for sluicing and Watanabe's (2010) extension of the N'-ellipsis analysis were also briefly discussed. I hope that further research that builds on these works will make the overall picture of elliptic phenomena in Japanese clearer.

Descriptive research and the effort to explain its results should proceed in parallel. In Section 4, I considered possible approaches to explain argument ellipsis and the descriptive condition on N'-ellipsis, VP-ellipsis, and sluicing. It is hypothesized in Minimalist research that there is a single structure-building operation, Merge, which freely combines two elements into a constituent. This operation is accompanied by the labeling algorithm, and φ-feature agreement serves to make labeling possible in some cases. The hypotheses entertained here are that the distribution of argument ellipsis follows from the mechanism of φ-feature agreement and that the condition on N'-ellipsis, VP-ellipsis, and sluicing is closely related to the labeling algorithm. As these ideas are still preliminary, I hope they will be developed, possibly into radically different proposals.

References

Abe, Jun. 1999. On directionality of movement: A case of Japanese right dislocation. Unpublished ms., Nagoya University.

Abney, Steven. 1987. The English noun phrase in its sentential aspect. Cambridge, MA: MIT dissertation.

An, Duk-Ho. 2007. Syntax at the PF interface. Storrs, CT: University of Connecticut dissertation.

Bedell, George. 1972. On no. UCLA Papers in Syntax 3: Studies in East Asian syntax, 1–20.

Carlson, Greg. 1987. Same and different: Some consequences for syntax and semantics. Linguistics and Philosophy 10, 531–565.

Chomsky, Noam. 1970. Remarks on nominalization. In Roderick A. Jacobs and Peter S. Rosenbaum (eds.), Readings in English transformational grammar, 184–221. Waltham, MA: Ginn.

Chomsky, Noam. 1986a. Barriers. Cambridge, MA: MIT Press.

Chomsky, Noam. 1986b. Knowledge of language: Its nature, origin, and use. New York: Praeger.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels and Juan Uriagereka (eds.), Step by step: Essays on minimalist syntax in honor of Howard Lasnik, 89–155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2008. On phases. In Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta (eds.), Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud, 133–166. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of projection. Lingua 130, 33–49.

Chomsky, Noam. 2015. Problems of projection: Extensions. In Elisa Di Domenico, Cornelia Hamann, and Simona Matteini (eds.), Structures, strategies and beyond: Studies in honour of Adriana Belletti, 3–16. Amsterdam: John Benjamins.

Chung, Sandra, William Ladusaw and James McCloskey. 1995. Sluicing and logical form. Natural Language Semantics 3, 239–282.

Fukaya, Teruhiko and Hajime Hoji. 1999. Stripping and sluicing in Japanese and some implications. Proceedings of the West Coast Conference on Formal Linguistics 18, 145–158.

Fukaya, Teruhiko. 2012. Island-sensitivity in Japanese sluicing and some implications. In Jason Merchant and Andrew Simpson (eds.), Sluicing: Cross-linguistic perspectives, 123–163. New York: Oxford University Press.

Fukui, Naoki. 1988. Deriving the differences between English and Japanese: A case study in parametric syntax. English Linguistics 5, 249–270.

Fukui, Naoki and Margaret Speas. 1986. Specifiers and projections. MIT Working Papers in Linguistics 8, 128–172. Cambridge, MA: MITWPL.

Funakoshi, Kenshi. 2012. On headless XP-movement/ellipsis. Linguistic Inquiry 43, 519–562.

Funakoshi, Kenshi. 2013. Disjunction and object drop in Japanese. Tampa Papers in Linguistics 4, 11–20.

Goto, Takuya. 2007. Language-specific constraints on scope interpretation in first language acquisition. College Park, MD: University of Maryland dissertation.

Harada, Shin-Ichi. 1973. Counter equi NP deletion. Annual Bulletin of the Research Institute of Logopedics and Phoniatrics 7, 113–147.

Hinds, John. 1973. On the status of the VP node in Japanese. Language Research 9(2), 44–57.

Hoji, Hajime. 1990. Theories of anaphora and aspects of Japanese syntax. Unpublished ms., University of Southern California.

Hoji, Hajime. 1998. Null objects and sloppy identity in Japanese. Linguistic Inquiry 29, 127–152.

Huang, C-T. James. 1987. Remarks on empty categories in Chinese. Linguistic Inquiry 18, 321–337.

Inoue, Kazuko. 1978. Nihongo no bunpō kisoku [Grammatical rules of Japanese]. Tokyo: Taishukan.

Kamio, Akio. 1983. Meishiku no kōzō [The structure of noun phrases]. In Kazuko Inoue (ed.), Nihongo no kihon kōzō [Basic structure of Japanese], 77–126. Tokyo: Sanseido.

Kayne, Richard S. 1994. The antisymmetry of syntax. Cambridge, MA: MIT Press.

Kim, Soowon. 1999. Sloppy/strict identity, empty objects, and NP ellipsis. Journal of East Asian Linguistics 8, 255–284.

Kitagawa, Chisato and Claudia Ross. 1982. Prenominal modification in Chinese and Japanese. Linguistic Analysis 9, 19–53.

Kuno, Susumu. 1973. The structure of the Japanese language. Cambridge, MA: MIT Press.

Kuno, Susumu. 1978. Japanese: A characteristic OV language. In Winfred P. Lehmann (ed.), Syntactic typology, 57–138. Austin: University of Texas Press.

Kuroda, S.-Y. 1965. Generative grammatical studies in the Japanese language. Cambridge, MA: MIT dissertation.

Kuroda, S.-Y. 1971. Remarks on the notion of subject with reference to words like also, even or only, Part II. Annual Bulletin of the Research Institute of Logopedics and Phoniatrics 4, 127–152.

Kuroda, S.-Y. 1988. Whether we agree or not: A comparative syntax of English and Japanese. Linguisticae Investigationes 12, 1–47.

Lasnik, Howard. 1981. Restricting the theory of transformations: A case study. In Norbert Hornstein and David Lightfoot (eds.), Explanation in linguistics: The logical problem of language acquisition, 152–173. New York: Longman.

Lasnik, Howard and Mamoru Saito. 1984. On the nature of proper government. Linguistic Inquiry 15, 235–289.

Lobeck, Ann. 1990. Functional heads as proper governors. Proceedings of the North East Linguistic Society 20, 348–362.

Matsumoto, Eri. 2010. Nihongo no in'yōhyōgen to hobun no seishitsu ni tsuite [On quotative expressions and clausal complements in Japanese]. BA thesis, Nanzan University.

Mukai, Emi. 2003. On verbless conjunction in Japanese. Proceedings of the North East Linguistic Society 33, 205–224.

Murasugi, Keiko. 1991. Noun phrases in Japanese and English: A study in syntax, learnability and acquisition. Storrs, CT: University of Connecticut dissertation.

Nishiyama, Kunio, John Whitman and Eun-Young Yi. 1996. Syntactic movement of overt wh-phrases in Japanese and Korean. In Noriko Akatsuka, Shoichi Iwasaki, and Susan Strauss (eds.), Japanese/ Korean Linguistics 5, 337–351.

Oka, Toshifusa. 1991. On the spec of IP. Unpublished ms., MIT.

Oku, Satoshi. 1998. A theory of selection and reconstruction in the minimalist perspective. Storrs, CT: University of Connecticut dissertation.

Okutsu, Keiichiro. 1974. Seisei nihon bunpō ron [A generative Japanese grammar]. Tokyo: Taishukan.

Otani, Kazuyo and John Whitman. 1991. V-raising and VP-ellipsis. Linguistic Inquiry 22, 345–358.

Perlmutter, David. 1972. Evidence for shadow pronouns in French relativization. In Paul M. Peranteau, Judith N. Levi and Gloria C. Phares (eds.), Chicago which hunt: Papers from the relative clause festival, 73–105. Chicago: Chicago Linguistic Society.

Richards, Norvin. 2003. Why there is an EPP. Gengo Kenkyu 123, 221–256.

Saito, Mamoru. 1989. Scrambling as semantically vacuous A'-movement. In Mark R. Baltin and Anthony S. Kroch (eds.), Alternative conceptions of phrase structure, 182–200. Chicago: University of Chicago Press.

Saito, Mamoru. 2003. Notes on discourse-based null arguments. Paper presented at Japanese/Korean Linguistics Conference 13, Michigan State University.

Saito, Mamoru. 2004. Ellipsis and pronominal reference in Japanese clefts. Nanzan Linguistics 1, 21–50.

Saito, Mamoru. 2007. Notes on East Asian argument ellipsis. Language Research 43, 203–227.

Saito, Mamoru. 2014. Case and labeling in a language without φ-feature agreement. In Anna Cardinaletti, Guglielmo Cinque and Yoshio Endo (eds.), On peripheries, 269–297. Tokyo: Hituzi Syobo.

Saito, Mamoru and Keiko Murasugi. 1990. N'-deletion in Japanese: A preliminary study. In Hajime Hoji (ed.), Japanese/Korean Linguistics 1. 285–301.

Şener, Serkan and Daiko Takahashi. 2010. Argument ellipsis in Japanese and Turkish. MIT Working Papers in Linguistics 61. 325–339. Cambridge, MA: MIT Press.

Shibata, Yoshiyuki. 2013. Negative structure and object movement in Japanese. Journal of East Asian Linguistics 24. 217–269.

Shinohara, Michie. 2004. Nihongo no sakujo genshō ni tsuite [On the ellipsis phenomena in Japanese]. BA thesis, Nanzan University.

Shinohara, Michie. 2006. Nihongo no kōsakujo ni kansuru kōsatu [Investigation into argument ellipsis in Japanese]. MA thesis, Nanzan University.

Stowell, Timothy. 1981. Origins of phrase structure. Cambridge, MA: MIT dissertation.

Takahashi, Daiko. 1994. Sluicing in Japanese. Journal of East Asian Linguistics 3. 265–300.

Takahashi, Daiko. 2008. Quantificational null objects and argument ellipsis. Linguistic Inquiry 39. 307–326.

Takahashi, Daiko. 2014a. Shugo/mokutekigo shōryaku no hikaku tōgoron [A comparative syntax of subject and object ellipsis]. In Keiko Murasugi (ed.), Research report in Linguistic variations within the confines of language faculty. 31–52. Nanzan University and National Institute for Japanese Language and Linguistics.

Takahashi, Daiko. 2014b. Argument ellipsis, anti-agreement, and scrambling. In Mamoru Saito (ed.), Japanese syntax in comparative perspective. 88–116. New York: Oxford University Press.

Takita, Kensuke. 2012. 'Genuine' sluicing in Japanese. Proceedings from the Annual Meeting of the Chicago Linguistic Society 45(1). 577–592.

Tanaka, Hidekazu. 2001. Right-dislocation as scrambling. Journal of Linguistics 37. 551–579.

Watanabe, Akira. 2006. Functional projections of nominals in Japanese: Syntax of classifiers. Natural Language & Linguistic Theory 24. 241–306.

Watanabe, Akira. 2010. Notes on nominal ellipsis and the nature of no and classifiers in Japanese. Journal of East Asian Linguistics 19. 61–74.

Williams, Edwin. 1977. Discourse and logical form. Linguistic Inquiry 8. 101–139.

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20 Syntax and argument structure

1 Introduction

Contrasted with adjuncts, arguments serve as obligatory and integral elements of predicates. Their analysis has raised a number of typological and theoretical issues in the linguistics literature, encompassing morphology, semantics, and syntax as well as their interface areas. Although nouns, verbs, adjectives, and pre- and post-positions can all take arguments, the literature on a predicate's arguments and argument structure has focused primarily on arguments of verbs. As important as they are, arguments of a predicate are not always straightforwardly identified in a given language since the degree of obligatoriness of linguistic expressions varies across languages. Particularly in languages like Japanese that allow an extensive use of contextually recoverable zero pronouns (or noun ellipsis), a predicate's arguments are semantically present for interpretations but are not necessarily realized syntactically as overt noun phrases. In these languages, the identification of a predicate's arguments cannot rely solely on the obligatory presence of noun phrases in a surface string of words. This challenge, to some degree, applies to English, which allows no, or at least extremely limited use of, zero pronouns. Examples like *I've already eaten (lunch)*, *Have you been drinking (alcoholic beverages) again?*, and even *This tiger kills (people) when he is hungry* illustrate the point. The definition of a predicate's arguments for languages like Japanese may well rely more on semantic measures, such as Comrie's (1993: 907): "Thus our overall definition of argument would be: a phrase that is either obligatory given the choice of predicate, or whose meaning is a function of that of the predicate, or whose behavior is parallel to argument so defined" (emphasis added).

While a variety of assumptions have been made in organizing arguments of predicates, what seems to be of general agreement is that argument structure specifies the number and semantic types (or thematic roles) of the arguments with which a verb has a strong association, syntactically or semantically, given Comrie's definition above. In some approaches, furthermore, structured ordering or hierarchical organization among the arguments has been claimed to explain various syntactic behavior (Bresnan and Kanerva 1989; Grimshaw 1990) The argument structures provided in (1), indicated within parentheses, display some of the standard representations of intransitive verbs (both unergative and unaccusative types), transitive verbs, and ditransitive verbs, as well as 'psych verbs' that pattern similar to transitive verbs in the number of arguments but differ from them in their semantic types.