This paper examines Max Elide, the ban on deleting a smaller constituent in cases where deletion of a larger constituent is possible. One intriguing property is that Max Elide effects are observed when a remnant moves out of an ellipsis site via A’-movement but not when it does via A-movement. To capture this fact, Merchant’s (2008) Max Elide condition is accompanied by an ad hoc proviso: elide the biggest deletable constituent if an elided constituent contains an A’-trace. This paper tries to recapture Max Elide effects in terms of a general economy principle without recourse to such an ad hoc proviso.*

**Keywords:** Max Elide, Economy, PF adjacency

1. Introduction

The main topic of this paper is a maximization effect observed in ellipsis environments; deletion of a smaller constituent is prohibited when a larger constituent is deletable. Due to this effect, for instance, VP-ellipsis (henceforth VPE) is banned when deletion can eliminate a larger constituent via sluicing. Such an effect was first pointed out by Fiengo and May (1994), and has been captured by the Max Elide condition; elide the biggest deletable constituent. There are several counter-examples to the simplest version of Max Elide and many linguists have revised the condition (cf. Kennedy (2002), Merchant (2008) and Takahashi (2006)). The purpose of this paper is not to revise the Max Elide condition in a more appropriate way. Rather, this paper tries to recapture Max Elide effects without resorting to the Max Elide condition and to propose an economy-based account. At the same time, this paper considers one intriguing property

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pointed out by Lasnik (2001) and Merchant (2008): Max Elide effects are observed only in cases where A'-extraction out of an ellipsis site takes place. In Merchant’s refined version of the Max Elide condition, this is dealt with as an ad hoc proviso: elide the biggest deletable constituent if an elided constituent contains an A’-trace. It is unclear why Max Elide is affected by A'-extraction. The economy-based account put forth in this paper recaptures the fact in a natural way without recourse to the ad hoc proviso.

This paper is organized as follows. Section 2 briefly overviews the history of refinement of the Max Elide condition, introducing the basic paradigms. Section 3 is devoted to an introduction of a crucial apparatus for our proposal: the movement theory put forward by Agbayani (2000, 2006), and Agbayani and Ochi (2006). Section 4 tries to deduce Max Elide to derivational economy. Section 5 considers empirical consequences regarding some matrix-embedded asymmetry, and T to C movement. Section 6 deals with two residual issues. Section 7 summarizes the whole discussion.

2. Max Elide Paradigms and Modification of the Max Elide Condition

This section overviews the history of refinement of the Max Elide condition and the basic paradigms of Max Elide. The typical examples of Max Elide are given in (1).

(1) They studied a Balkan language,
   a. … but I don’t know [which Balkan language], they studied t_i.  : No Ellipsis
   b. … but I don’t know [which Balkan language], <TP they did study t_i>.  : Sluicing
   c. … but I don’t know [which Balkan language], they did <VP study t_i>.  : VPE
      (Lasnik (2001))

(1a) contains a wh-question in the embedded clause of the second conjunct. (1b) and (1c) are its elided counterparts. The elided parts are indicated by angle brackets. (1b) involves sluicing, by which the TP constituent is deleted. (1c) is an example of VPE, by which the VP constituent is eliminated. Although the only difference between (1b) and (1c) seems to be the size of the deleted parts, the example of VPE is somehow degraded. The contrast has been captured by the “Max Elide” condition, which is defined as (2).

(2) Max Elide
    Elide the biggest deletable constituent.  (Takahashi (2006))
The condition successfully rules in (1b) and rules out (1c): the possibility of deleting the TP constituent blocks that of VPE, since the TP constituent, but not the VP constituent, is the biggest deletable constituent.

However, the simplest version of the Max Elide condition faces a difficulty when we consider the following examples.

(3)  
a. John said Mary likes Peter. BILL also did $_{VP}$ say she likes Peter. : VPE
   b. John said Mary likes Peter. BILL also said she does $_{VP}$ like Peter. : VPE

(Takahashi (2006))

Here, two VPs are candidates for deletion: the embedding VP as in (3a) and the embedded VP as in (3b). The Max Elide condition in (2) should exclude the possibility of deleting the latter, contrary to fact. Why is VPE banned in (1c) but not in (3b)? One difference is the presence/absence of extraction out of the ellipsis site. In (1c), the wh-phrase is extracted out of the elided VP whereas no elements move out of the ellipsis site in (3b). One might claim that the degradeness of (1c) is due to the ban on extraction out of an ellipsis site or that Max Elide applies only in cases where some element is extracted out of an ellipsis site.

However, the story is not so simple. Let us consider the following examples, where the subject wh-phrase moves out of the ellipsis site.

(4)  
a. Who$_t$$_{TP}$ solved the problem? : Sluicing
   b. Who$_t$$_{VP}$ solved the problem? : VPE

(Takahashi (2006))

Crucially, the example of VPE is grammatical as well as that of sluicing. (4b) shows that extraction out of an elided VP is possible. Notice also that the simplest version of the Max Elide condition in (2) wrongly rules out the example of VPE. How can we rule in (4b) and rule out (1c)? Lasnik (2001) points out that the contrast is a subject-object asymmetry; in (4b) the wh-phrase is subject whereas in (1c) it is object. With the subject-object asymmetry in mind, Merchant (2008) revised the Max Elide condition as in (5).

(5)  **Max Elide**

Let XP be an elided constituent containing an A’-trace. Let YP be a possible target for deletion. YP must not properly contain XP.  

(Merchant (2008))

Here, ‘A’-trace’ is a trace created by A’-movement such as wh-movement. The condition requires that deletion should eliminate the biggest
constituent if an ellipsis site contains an A’-trace. Let us consider how the revised Max Elide condition accounts for the subject-object asymmetry.

(6) Subject-Object Asymmetry

a. They studied a Balkan language, but I don’t know which Balkan language they did \(<[\text{VP} \text{study }t_A]>\). \(=1c\)

b. Who did \([\text{TP} t_A \text{ }<[\text{VP} t_A \text{ solve the problem}>]\)? \(=4b\)

In (6a), the object wh-phrase moves out of the ellipsis site via wh-movement, leaving an A’-trace in the ellipsis site. Then, the Max Elide condition rules out the example, given that deletion of the TP constituent, illustrated in (1b), is possible. In (6b), on the other hand, the wh-phrase undergoes two kinds of movement; the initial movement is A-movement to Spec-TP for the EPP requirement and then wh-movement carries the wh-phrase to Spec-CP. This means that the trace in the ellipsis site is an A-trace but not an A’-trace. Then, the Max Elide condition is vacuously satisfied in this case.

The revised Max Elide condition can also accommodate (3b), reproduced as (7b), another counter-example to the simplest version of the Max Elide condition in (2).

(7) No Extraction

a. John said Mary likes Peter. BILL also did \(<[\text{VP} \text{say Mary likes Peter}>]\) :

\[
\text{VPE}
\]

b. John said Mary likes Peter. BILL also said she does \(<[\text{VP} \text{like Peter}>]\) :

\[
\text{VPE}
\]

The examples do not involve extraction out of the ellipsis site. Since the ellipsis site does not contain an A’-trace, the revised Max Elide condition is vacuously satisfied in (7b) as in (7a).

Even the revised Max Elide condition, however, needs further refinement, given the following examples pointed out by Takahashi (2006).

(8) Co-binding

a. I know which puppy you said Mary would adopt \(t_A\), and Fred did \(<[\text{VP} \text{say she would adopt } t_A]>\), too. :

\[
\text{VPE}
\]

b. I know which puppy you said Mary would adopt \( t_A\), and Fred said she would \(<[\text{VP} \text{adopt } t_A]>\), too. :

\[
\text{VPE}
\]

(Takahashi (2006))

Here, the object wh-phrase undergoes wh-movement in an ATB fashion. Takahashi (2006) dubs this case a ‘co-binding’ case in that the moved wh-phrase simultaneously binds two variables. Of importance is that the trace inside the ellipsis site is an A’-trace. Then it is wrongly predicted that the possibility of VPE in (8b) should be blocked given the possibility
of deleting the larger VP in (8a).

The basic Max Elide paradigms are summarized as follows.

(9) **Overview of the Max Elide Paradigms**

| Type                | Examples  | Max Elide Effects |
|---------------------|-----------|-------------------|
| No Extraction       | (3a, b)   | Not Observed      |
| Object Extraction   | (1a, b, c)| Observed          |
| Subject Extraction  | (4a, b)   | Not Observed      |
| Co-binding          | (8a, b)   | Not Observed      |

Merchant’s (2008) refined Max Elide condition can accommodate the data (1), (3), and (4), but not (8). Moreover, he defines the condition with an ad hoc proviso: elide the biggest deletable constituent if an elided constituent contains an A’-trace. It is unclear why Max Elide is limited only to the cases where an ellipsis site contains an A’-trace. In this sense, Merchant’s Max Elide condition is not a principled explanation.

In what follows, we try to propose an economy-based account of Max Elide, presenting a natural answer to the question why Max Elide effects are observed only in cases where A’-extraction takes place.

3. Theoretical Apparatus: Two-Chain Movement Theory

Before proposing the account, we introduce a crucial theoretical apparatus: the movement theory put forward by Agbayani (2000, 2006), and Agbayani and Ochi (2006). It is based on Chomsky’s (1995) two-chain movement theory, according to which overt movement consists of two suboperations: feature movement and category movement. Once formal features undergo feature movement and are stripped away from their category, they become PF defective. In Chomsky’s (1995) terms, “isolated features and other scattered parts of words may not be subject to PF rules, in which case the derivation is canceled.” Chomsky does not elaborate on the PF defectiveness. Agbayani and Ochi claim that the PF defectiveness in question is a violation of a certain adjacency condition, which I dub the “PF Adjacency Condition.”

(10) **The PF Adjacency Condition**

a. F and its category have to be adjacent to each other.

b. Two elements are adjacent if no elements that are visible at the interface intervene between them.

(based on Agbayani (2000))

The condition requires that a formal feature (or a set of formal features)
moved by feature movement and its remnant category should be phonetically adjacent to each other.

Let us observe how the movement mechanism works with the following example, where the object wh-phrase undergoes wh-movement.

(11) What did you buy?
   a. \([CP \ C_{[Q]} [\text{TP you T buy what}_{[+\text{WH}]}]]\)
      ▷ Feature Movement
   b. \([CP [+\text{wh}] + C_{[Q]} [\text{TP you T buy what}]]\)
      ▷ Movement of Category
   c. \([CP \text{what}_i [C_{[+\text{wh}]} + C_{[Q]} [\text{TP you T buy } t_i]]\]

The underlying position of the wh-phrase is the object position of the verb *buy*. (11a) shows the stage of the derivation where C with the \(Q\)-feature enters the derivation. In order to check this feature, the wh-feature undergoes feature movement. At this stage, the moved wh-feature and its category are not phonetically adjacent to each other because the overt elements *you* and *buy* intervene between them. If the derivation stopped at the stage in (11b), it would crash as a violation of the PF Adjacency Condition. In order for this condition to be satisfied, the remnant category undergoes category movement and moves to Spec-CP, a position adjacent to the moved wh-feature, as shown in (11c). This is how standard cases of wh-movement involve feature movement and category movement.

One of the consequences of this movement theory is that when the PF Adjacency Condition can be satisfied directly after feature movement takes place, category movement is unnecessary. Agbayani and Ochi claim that one such case is local subject movement as exemplified in (12).

(12) Who will come?
   a. \([CP C_{[Q]} [\text{TP who}_{[+\text{WH}]} \text{will come}]]\)
      ▷ Feature Movement
   b. \([CP [+\text{wh}] + C_{[Q]} [\text{TP who will come}]]\)

In order to check the \(Q\)-feature, the wh-feature of *who* undergoes feature movement. Although the wh-feature is stripped away from its category, they are still phonetically adjacent to each other, since no overt elements intervene between them. Thus, the PF Adjacency Condition is satisfied without recourse to category movement. Agbayani and Ochi claim that in the case at hand, the application of category movement is banned by the economy condition which precludes superfluous steps.

The gist of Agbayani and Ochi’s movement theory is summarized as follows. Category movement is regulated by the PF Adjacency Condition. If the condition can be satisfied without recourse to category movement, the
application of the operation is banned by the derivational economy condition which precludes superfluous steps.

4. Proposal: An Economy Account of Max Elide

Utilizing the movement theory just reviewed, this section proposes a novel account of Max Elide. Our main claim is as follows: the degraded or ungrammatical cases of VPE involve more derivational steps than the grammatical examples of sluicing or VPE, so that the former is ruled out by the economy principle.

Before considering the Max Elide paradigms in detail, let me introduce three crucial assumptions other than the movement mechanism just introduced. First, we assume with Den Dikken, Meinunger and Wilder (2000), and Van Craenenbroeck and Den Dikken (2006) that deletion can affect non-constituents and that deletion eliminates all the recoverable elements except a focused phrase.1

More specifically, we define sluicing and VPE as (13).

1. Sluicing
   —delete all the recoverable elements except a focused phrase inside a TP constituent.

2. VPE
   —delete all the recoverable elements except a focused phrase inside a VP constituent.

Secondly, we assume that deletion is triggered by the “[E]-feature” proposed by Merchant (2001). Merchant claims that this feature instructs PF not to phonetically realize its complement. Since we assume that deletion can eliminate non-constituents, however, we need to modify the PF instruction as follows; the [E]-feature instructs PF not to parse all the recoverable elements except a focused phrase inside the complement whose head has this feature. This feature occupies C in sluicing and v in VPE, and hence PF does not parse all the recoverable elements except a focused phrase inside the complement of the heads. By adopting this feature, we try to deal with two issues. One is an identity issue. We assume with Merchant that the semantic property of the [E]-feature requires that deletion should take

1 Den Dikken, Meinunger and Wilder (2000), and Van Craenenbroeck and Den Dikken (2006) claim based on short answers that deletion can eliminate non-constituents. As for their concrete definition of deletion, see den Dikken, Meinunger and Wilder (2000).
place under a semantic identity condition based on mutual entailment. The other issue is a look-ahead problem. We will claim in section 6.2 that the [E]-feature presents a possible solution to the look-ahead problem.

The last assumption crucial for the following discussion is that derivational economy only compares derivations that lead to the same semantic interpretation. Since the examples of sluicing and VPE which have been treated via Max Elide have the same interpretation, their derivations can be compared from the viewpoint of economy. With these assumptions in mind, let us move on to reconsidering the Max Elide Paradigms.

4.1. Object Extraction

Let us start with the object extraction case, the typical example of Max Elide.

(14) They studied a Balkan language,
    a. … but I don’t know [which Balkan language], they studied $t_i$. : No Ellipsis
    b. … but I don’t know [which Balkan language], $<$TP they did study $t_i$.$>$ : Sluicing
    c. ?? … but I don’t know [which Balkan language], they did $<$VP study $t_i$.$>$ : VPE

These examples involve object wh-movement, and only the example of VPE is degraded. Notice also that all these examples lead to the same interpretation. Then, derivational economy compares their derivations and excludes less economical one. Let us consider the derivations one by one. The non-elided example is derived as in (15).

(15) a. $[CP C_{Q} [TP they studied which Balkan language]_{[-WH]}]]$
    $\triangleright$ Feature Movement
b. $[CP [+wh] +C_{Q} [TP they studied which Balkan language]]$
    $\triangleright$ Category Movement
c. $[CP which Balkan language $[C' [+wh] + C_{Q} [TP they studied \ t_i]]]]$

After feature movement applies to the wh-feature to check the $Q$-feature, its category undergoes category movement; otherwise the PF Adjacency Condition would never be satisfied.

Next, let us consider the example of sluicing.

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2 As for the detailed discussion of semantic identity, see Merchant (2001).
Again, the wh-feature undergoes feature movement to check the $Q$-feature. Once the formal feature is stripped away from its category *which Balkan language*, the relation between them is required to satisfy the PF Adjacency Condition. In this case at hand, the PF condition is satisfied via deletion of the overt interveners. Recall the definition of sluicing: sluicing eliminates all the recoverable elements except a focused phrase inside a TP constituent. Then, deletion applies as in (16c), where the wh-phrase survives deletion because it is a focused phrase. Crucially, this operation eliminates all the interveners between the moved wh-feature and its wh-category. Thus, the PF Adjacency Condition is satisfied without recourse to category movement.$^3$

Finally, let us consider the example of VPE. If the wh-phrase stayed in situ as in the case of sluicing, then we would have a derivation like (17).

$$\begin{align*}
(17) \quad \text{a. } & [CP \ C_{Q} \ [TP \ they \ did \ [VP \ study \ which \ Balkan \ language_{[+WH]}]]] \\
& \quad \circ \text{ Feature Movement} \\
\quad \text{b. } & [CP \ [+wh] \ + \ C_{Q} \ [TP \ they \ did \ [VP \ study \ which \ Balkan \ language]]] \\
& \quad \circ \text{ Deletion (VPE)} \\
\quad \text{c. } & [CP \ [+wh] \ + \ C_{Q} \ [TP \ they \ did \ [VP \ study \ which \ Balkan \ language]]] \\
\end{align*}$$

Deletion applies as in (17c) in accordance with the definition of VPE in (13b). Crucially, it cannot eliminate all the overt interveners between the moved wh-feature and its category: *they* and *did* survive the deletion. Thus, the derivation results in a violation of the PF Adjacency Condition. There is an alternative derivation satisfying this condition, which is given below.

$$\begin{align*}
(18) \quad \text{a. } & [CP \ C_{Q} \ [TP \ they \ did \ study \ which \ Balkan \ language_{[+WH]}]]] \\
& \quad \circ \text{ Feature Movement} \\
\quad \text{b. } & [CP \ [+wh] \ + \ C_{Q} \ [TP \ they \ did \ study \ which \ Balkan \ language]]] \\
& \quad \circ \text{ Category Movement} \\
\end{align*}$$

$^3$ Here, we assume that the remnant wh-phrase stays in situ. Given that English does not allow wh-phrases to stay in situ in regular wh-questions, one might claim that the non-movement analysis of sluicing is implausible. However, Kimura (2010) provides arguments for such an analysis, some of which are discussed in section 6.
c. \[
\text{[CP which Balkan language, } [C^\prime \ [+wh] + C_{[Q]} \ [TP \ they \ did \ [VP \ study \ t]]]]
\]
\[\text{\quad \textcircled{\text{Deletion (VPE)}}}\]

d. \[
\text{[CP which Balkan language, } [C^\prime \ [+wh] + C_{[Q]} \ [TP \ they \ did \ [VP \ study \ t]]]]
\]

After feature movement takes place, the wh-category moves to a position adjacent to the moved wh-feature via category movement, so that the PF Adjacency Condition is satisfied. However, the derivation is less economical than that of the non-elided wh-question or that of sluicing; the former involves more derivational steps. Thus, the derivation of VPE in (18) is ruled out by the derivational economy principle which precludes superfluous steps. This is how the typical Max Elide paradigm is recaptured.

4.2. No Extraction

Let us move on to the cases without extraction out of an ellipsis site. In such cases, Max Elide effects are not observed; deletion of a smaller constituent is allowed as well as a larger one. The economy-based account can also accommodate these cases. Let us consider the derivations of (3), reproduced as (19).

(19) a. John said Mary likes Peter. BILL also did \(<_{VP} \text{say she likes Peter}>\). : VPE
b. John said Mary likes Peter. BILL also said she does \(<_{VP} \text{like Peter}>\). : VPE

(20) a. Bill also did \([_{VP} \text{say she likes Peter}]\)
\[\text{\quad \textcircled{\text{Deletion (VPE)}}}\]
b. Bill also did \([_{VP} \text{say she likes Peter}]\)

(21) a. Bill also said she does \([_{VP} \text{like Peter}]\)
\[\text{\quad \textcircled{\text{Deletion (VPE)}}}\]
b. Bill also said she does \([_{VP} \text{like Peter}]\)

(20) is the derivation of (19a), and (21) is that of (19b). These derivations involve the same number of operations and hence both derivations are equally economical. Hence, these examples have no difference in their grammaticality.

4.3. Subject Extraction

Another case which does not exhibit Max Elide effects is the case involving local subject movement. The relevant examples are reproduced below.
Someone solved the problem.

a. Who \( t_A^\prime \) solved the problem? : Sluicing (=4a)

b. Who did \( t_A^\prime \) solve the problem? : VPE (=4b)

To capture the lack of a Max Elide effect in the case, Merchant’s Max Elide condition resorts to an ad hoc proviso: elide the biggest deletable constituent if an elided constituent contains an A′-trace. He claims that in (22b), the Max Elide condition is vacuously satisfied because the trace inside the ellipsis site is not an A′-trace, but rather it is an A-trace.

Our economy-based account need not resort to such an ad hoc proviso based on the A-A′ distinction. The derivation of the example of sluicing proceeds through feature movement and deletion, as in (23).4

(23)

a. \([CP C_\{Q\} [TP who [+WH] solved the problem]]\)
   \hspace{1cm} \odownarrow \hspace{1cm} \text{Feature Movement}

b. \([CP [+wh] + C_\{Q\} [TP who solved the problem]]\)
   \hspace{1cm} \odownarrow \hspace{1cm} \text{Deletion (Sluicing)}

c. \([CP [+wh] + C_\{Q\} [TP who solved the problem]]\)

The subject wh-phrase is base-generated in Spec-VP in accordance with the VP-internal Subject Hypothesis (cf. Kitagawa (1986) and Kuroda (1988)), and then it moves to Spec-TP for the EPP requirement. When C with a \( Q \)-feature enters the derivation, the wh-feature undergoes feature movement. Directly after feature movement takes place, the moved wh-feature and its remnant category are phonetically adjacent to each other. Thus, the PF Adjacency Condition is satisfied without recourse to category movement.

The example of VPE is derived through similar derivational steps.

(24)

a. \([CP C_\{Q\} [TP who [+WH] did [VP solve the problem]]]\)
   \hspace{1cm} \odownarrow \hspace{1cm} \text{Feature Movement}

b. \([CP [+wh] + C_\{Q\} [TP who did [VP solve the problem]]]\)
   \hspace{1cm} \odownarrow \hspace{1cm} \text{Deletion (VPE)}

c. \([CP [+wh] + C_\{Q\} [TP who did [VP solve the problem]]]\)

Again, the subject wh-phrase moves to Spec-TP for the EPP requirement. As a result of this operation, the wh-phrase occupies a position adjacent to its formal feature moved via feature movement, so that the PF Adjacency Condition is satisfied without recourse to category movement. Since the derivation of VPE is equally economical to that of sluicing, the VPE

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4 As an anonymous reviewer points out, deletion in question seems to be T′-deletion. However, we do not assume that deletion eliminates the T′-constituent in the case at hand. Rather, we assume that deletion eliminates all the recoverable elements except a focused phrase inside TP.
example is grammatical as well as its sluicing counterpart.

4.4. Co-Binding

Let us go on to a more complicated case in (8), reproduced as (25).

(25) **Co-binding**

a. I know which puppy you said Mary would adopt \( t_A \) and Fred did <\( <_{VP} \) say she would adopt \( t_A \)>, too. : VPE

b. I know which puppy you said Mary would adopt \( t_A \) and Fred said she would <\( <_{VP} \) adopt \( t_A \)>, too. : VPE

Here, the wh-phrase is extracted out of the antecedent VP and the elided VP in a parallel way. Suppose that both feature movement and category movement proceed in an ATB fashion. Then, the derivation of (25a) is something like (26).

(26) a. \([CP C_{[Q]} [TP you [VP said Mary would adopt which puppy\_{[+WH]}]]\]
   and \([TP Fred did [VP say she would adopt which puppy\_{[+WH]}]]\)
   \(\triangleright\) Feature Movement

b. \([CP [+wh] + C_{[Q]} [TP you [VP said Mary would adopt which puppy]]\]
   and \([TP Fred did [VP say she would adopt which puppy]]\)
   \(\triangleright\) Category Movement

c. \([CP which puppy_i [C_{[+wh]} + C_{[Q]} [TP you [VP said Mary would adopt \( t_i \)]]\]
   and \([TP Fred did [VP say she would adopt \( t_i \)]]\)]
   \(\triangleright\) Deletion (VPE)

d. \([CP which puppy_i [C_{[+wh]} + C_{[Q]} [TP you said Mary would adopt \( t_i \)]]\]
   and \([TP Fred did [VP say she would adopt \( t_i \)]]\)]

In this case, the wh-phrase undergoes category movement; otherwise the PF Adjacency Condition would be violated. Crucially, the derivation of (25b) involves the same number of operations, as shown in (27).

(27) a. \([CP C_{[Q]} [TP you said Mary would [VP adopt which puppy\_{[+WH]}]]\]
   and \([TP Fred said she would [VP adopt which puppy\_{[+WH]}]]\)
   \(\triangleright\) Feature Movement

b. \([CP [+wh] + C_{[Q]} [TP you said Mary would [VP adopt which puppy]]\]
   and \([TP Fred said she would [VP adopt which puppy]]\)
   \(\triangleright\) Category Movement

\(^5\) As for an independent argument for overt ATB movement, see Bošković and Franks (2000). Given that feature movement is a pre-requisite of category movement, which we have assumed in this paper, it is natural that feature movement also takes place in an ATB fashion.
c. \([\text{CP which puppy}_i \ [C'_i [+\text{wh}] + C_{[Q]} \ [\text{TP you said Mary would} \ [\text{VP adopt} \ t_i]]] \text{ and } [\text{TP Fred said she would} \ [\text{VP adopt} \ t_i]]]\)  \\
\hspace{1cm}\text{Deletion (VPE)}

d. \([\text{CP which puppy}_i \ [C'_i [+\text{wh}] + C_{[Q]} \ [\text{TP you said Mary would} \ [\text{VP adopt} \ t_i]]] \text{ and } [\text{TP Fred did say she} \ [\text{VP would adopt} \ t_i]]]\)

Again, category movement takes place, in addition to feature movement and deletion. Since the derivation in (27) is equally economical to that in (26), (25b) is grammatical as (25a) is.

4.5. Interim Summary

We have explained the basic paradigms of Max Elide, summarized as (28).

(28) **Overview of the Max Elide Paradigms**

| Type                | Examples   | Max Elide Effects |
|---------------------|------------|-------------------|
| No Extraction       | (3a, b)    | Not Observed      |
| Object Extraction   | (1a, b, c) | Observed          |
| Subject Extraction  | (4a, b)    | Not Observed      |
| Co-binding          | (8a, b)    | Not Observed      |

The current analysis does not require the ad hoc proviso based on the A-A’ distinction which Merchant’s (2008) account does. Recall that the proviso is proposed to capture the subject-object asymmetry. In the case of subject extraction, the trace in the elided VP is an A-trace, so that the Max Elide condition is vacuously satisfied. Meanwhile, Max Elide effects are observed in the case of VPE with object extraction because the movement in question is wh-movement, leaving an A’-trace inside the ellipsis site. Merchant does not answer the question why Max Elide is sensitive to such an A-A’ distinction.

The current economy-based account explains the subject-object asymmetry in a different way: the difference is category movement of the remnant wh-phrase out of the ellipsis site. A subject remnant does not move out of the ellipsis site while an object remnant is extracted out of the ellipsis site. Our main claim is that if a derivation where a remnant category can stay in situ is possible, an alternative derivation involving extraction out of an ellipsis site is blocked for reasons of economy. Since the object remnant moves out of the elided VP and stays inside the sluiced part, the derivation of VPE is less economical than that of sluicing. Meanwhile, the subject remnant stays in situ both in sluicing and in VPE, so that the derivations in question are equally economical.
Another conclusion made by the current account is this: if a remnant has
to move out of the ellipsis site, whether deletion applies to a smaller part
or a larger part, deletion of a smaller part is allowed as well as deletion of
a larger part. This is because both derivations are equally economical in
that they both involve category movement. One such case is the example
involving co-binding.

Finally, it is also natural that without extraction, deletion of a smaller
constituent is allowed as well as that of a larger one, since both derivations
are equally economical in not involving category movement.

5. Consequences

This section considers two empirical consequences of the current ac-
count. One is concerned with a certain matrix-embedded asymmetry and
the other is concerned with T to C movement.

5.1. Subject Extraction and Matrix-Embedded Asymmetry

Let us start with reviewing the following examples of data involving a
subject remnant. The example of VPE is grammatical as its sluicing coun-
terpart.

(29) Someone solved the problem.
   a. Who_{TP} t_i solved the problem>?
   : Sluicing
   b. Who_{VP} did < VP t_i solve the problem>?
   : VPE

The derivations of the two examples, reproduced as (30) and (31), are
equally economical.

(30) a. \[[CP C_{[Q]} [TP who_{[+WH]} solved the problem]]\]
   \begin{align*}
   &\downarrow \text{Feature Movement} \\
   &b. \ [CP [+wh] + C_{[Q]} [TP who solved the problem]]
   \end{align*}
   \begin{align*}
   &\downarrow \text{Deletion (Sluicing)} \\
   &c. [CP [+wh] + C_{[Q]} [TP who solved the problem]]
   \end{align*}
(31) a. \[[CP C_{[Q]} [TP who_{[+WH]} did [VP solve the problem]]]\]
   \begin{align*}
   &\downarrow \text{Feature Movement} \\
   &b. \ [CP [+wh] + C_{[Q]} [TP who did [VP solve the problem]]]\n   \end{align*}
   \begin{align*}
   &\downarrow \text{Deletion (VPE)} \\
   &c. [CP [+wh] + C_{[Q]} [TP who did [VP solve the problem]]]
   \end{align*}

The key point is that since the wh-phrase occupies Spec-TP, a position pho-
netically adjacent to the moved wh-feature, it need not undergo category
movement to Spec-CP.

One natural prediction related to the above data is that if a subject wh-
phrase does not occur in matrix Spec-TP, it has to undergo category movement in cases of VPE. Then, such a derivation of VPE is less economical than its sluicing counterpart, so that the former is ruled out by the economy principle. The prediction is in fact borne out by the following examples.

(32) Mary said a certain girl would come,
   a. ... but I forget which girl\(_{<_{TP} t_i \text{ would come}}\). : Sluicing
   b. *... but I forget which girl she did\(_{<_{VP} t_i \text{ would come}}\). : VPE

(Hartman (2011))

Hartman (2011) points out that the example of VPE is ungrammatical in contrast with its sluicing counterpart. One difference between (29) and (32) is the position of the subject wh-phrase; the wh-phrase is a matrix subject in (29) whereas it is an embedded subject in (32). Let us consider the derivation of (32). In the derivation of sluicing, the subject wh-phrase does not undergo category movement to Spec-CP, since the PF Adjacency Condition can be satisfied by deleting all the overt interveners between the moved wh-feature and its category, as in (33).

(33) a. \([CP C_{[Q]} [TP \text{ she said } [TP \text{ which girl}_{[+WH]} \text{ would come}]]]\)
   \hspace{1em} \downarrow \text{Feature Movement}
   b. \([CP [+wh] + C_{[Q]} [TP \text{ she said } [TP \text{ which girl would come}]]]\)
   \hspace{1em} \downarrow \text{Deletion (Sluicing)}
   c. \([CP [+wh] + C_{[Q]} [TP \text{ she said } [TP \text{ which girl would come}]]]\)

Turning to the case of VPE, we can see that if the subject wh-phrase did not undergo category movement, such a derivation would violate the PF Adjacency Condition, as shown below.

(34) a. \([CP C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP \text{ which girl}_{[+WH]} \text{ would come}]]]]\)
   \hspace{1em} \downarrow \text{Feature Movement}
   b. \([CP [+wh] + C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP \text{ which girl would come}]]]]\)
   \hspace{1em} \downarrow \text{Deletion (VPE)}
   c. \([CP [+wh] + C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP \text{ which girl would come}]]]]\)

Even after deletion takes place, the overt elements \textit{she} and \textit{did} still intervene between the wh-feature and its category. An alternative derivation satisfying the PF Adjacency Condition is given below.

(35) a. \([CP C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP \text{ which girl}_{[+WH]} \text{ would come}]]]]\)
   \hspace{1em} \downarrow \text{Feature Movement}
   b. \([CP [+wh] + C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP \text{ which girl would come}]]]]\)
   \hspace{1em} \downarrow \text{Category Movement}
   c. \([CP \text{ which girl}_{[C^+ [+wh] + C_{[Q]} [TP \text{ she did } [VP \text{ say } [TP t_i \text{ would come}]]]]]}\)
   \hspace{1em} \downarrow \text{Deletion (VPE)}
d. \([\text{CP which girl}_i [\text{C} [+wh] + C_{[Q]} [\text{TP she did [\text{VP say [\text{TP t}}_i \text{ would come]}]]]]]\)

The subject wh-phrase undergoes category movement and moves to Spec-CP, a position adjacent to its moved wh-feature. Crucially, the derivation is less economical than that of (33) and hence it is ruled out by the economy principle.

5.2. Adjunct Extraction and the Matrix-Embedded Asymmetry

A similar matrix-embedded asymmetry is observed for adjunct wh-phrases. Hartman (2011) points out that the following example of sluicing is ambiguous; the adjunct wh-phrase modifies the matrix clause as in (36a) or the embedded clause as in (36b).

(36) John said Mary would leave, but I forget when.

a. I forget \([\text{CP when}_i [\text{TP t}_i \text{ he said Mary would leave]}]]\)
   : Matrix Reading

b. I forget \([\text{CP when he said [\text{TP t}_i \text{ Mary would leave]}]}]]\)
   : Embedded Reading
   (Hartman (2011))

Hartman also observes that its VP-ellipsis counterpart is unambiguous; it has only the matrix reading in (37a) and the embedded reading in (37b) disappears.

(37) John said Mary would leave, but I forget when he did.

a. I forget \([\text{CP when}_i [\text{TP t}_i \text{ he said Mary would leave]}]]\)
   : Matrix Reading

b. *I forget \([\text{CP when he said [\text{TP t}_i \text{ Mary would leave]}]}]]\)
   : Embedded Reading
   (Hartman (2011))

He claims that the lack of the embedded reading in the case of VPE is due to a Max Elide effect. Why is the effect observed only for the embedded reading? The fact can also be explained by the economy-based account combined with a certain assumption on the base position of adjuncts. Suppose with Baltin (2007) and Hartman (2011) that an adjunct wh-phrase is base-generated outside a VP. More specifically, we assume that it is a position adjoined to Spec-TP, following Hartman (2011).

With this assumption in mind, let us consider the derivation of sluicing with the embedded interpretation.
(38)  a.  \[\text{CP } C_{[Q]} \text{ he said } [\text{TP when} [+\text{WH}] [\text{TP Mary would leave}]]\]
   \hspace{1cm} \Downarrow \text{Feature Movement}

   b.  \[\text{CP } [+\text{wh}] + C_{[Q]} \text{ he said } [\text{TP when} [\text{TP Mary would leave}]]\]
   \hspace{1cm} \Downarrow \text{Deletion (Sluicing)}

   c.  \[\text{CP } [+\text{wh}] + C_{[Q]} \text{ he said } [\text{TP when} [\text{TP Mary would leave}]]\]

In (38a), the adjunct wh-phrase is adjoined to Spec-TP of the embedded clause. It does not undergo category movement and stays in this position, since the PF Adjacency Condition can be satisfied by deletion.

Let us next consider the derivation of VPE with the embedded reading. If the wh-phrase stayed in situ, we would have a derivation like (39).

(39)  a.  \[\text{CP } C_{[Q]} \text{ he did } [\text{VP say } [\text{TP when} [+\text{WH}] [\text{TP Mary would leave}]]]\]
   \hspace{1cm} \Downarrow \text{Feature Movement}

   b.  \[\text{CP } [+\text{wh}] + C_{[Q]} \text{ he did } [\text{VP say } [\text{TP when} [\text{TP Mary would leave}]]]\]
   \hspace{1cm} \Downarrow \text{Deletion (VPE)}

   c.  \[\text{CP } [+\text{wh}] + C_{[Q]} \text{ he did } [\text{VP say } [\text{TP when} [\text{TP Mary would leave}]]]\]

Even after deletion takes place, the overt elements he and did still intervene between the moved wh-feature and its category. Thus, the derivation is ruled out as a violation of the PF Adjacency Condition. In order for the PF condition to be satisfied, the wh-phrase has to undergo category movement, as in (40).

(40)  a.  \[\text{CP } C_{[Q]} \text{ he did } [\text{VP say } [\text{TP when} [+\text{WH}] [\text{TP Mary would leave}]]]\]
   \hspace{1cm} \Downarrow \text{Feature Movement}

   b.  \[\text{CP } [+\text{wh}] + C_{[Q]} \text{ he did } [\text{VP say } [\text{TP when} [\text{TP Mary would leave}]]]\]
   \hspace{1cm} \Downarrow \text{Category Movement}

   c.  \[\text{CP when} \left[ C_{[Q]} \right] \text{ he did } [\text{VP say } [\text{TP t} [\text{TP Mary would leave}]]]\]
   \hspace{1cm} \Downarrow \text{Deletion (VPE)}

   d.  \[\text{CP when} \left[ C_{[Q]} \right] \text{ he did } [\text{VP say } [\text{TP t} [\text{TP Mary would leave}]]]\]

Here, the wh-phrase moves to Spec-CP via category movement. Although this derivation satisfies the PF Adjacency Condition, it is less economical than the derivation of (38). Thus, the example of VPE lacks the embedded interpretation.

As for the matrix reading, on the other hand, the derivation of sluicing
and that of VPE are equally economical. Let us first consider the derivation of sluicing.

(41) a. \[\text{CP } C_\text{[Q]} \text{ [TP when}_{\text{[+WH]}} \text{ [TP he said Mary would leave]]}\]
   \[\text{\quad \textcircled{Feature Movement}}\]

b. \[\text{CP } [+\text{wh}] + C_\text{[Q]} \text{ [TP when [TP he said Mary would leave]]}\]
   \[\text{\quad \textcircled{Deletion}}\]

c. \[\text{CP } [+\text{wh}] + C_\text{[Q]} \text{ [TP when [TP he said Mary would leave]]}\]
The wh-phrase is adjoined to Spec-TP of the matrix clause. This position is phonetically adjacent to the landing site of the wh-feature, so that the PF Adjacency Condition is satisfied without recourse to category movement.

The example of VPE with the matrix reading can be derived in a similar way.

(42) a. \[\text{CP } C_\text{[Q]} \text{ [TP when}_{\text{[+WH]}} \text{ [TP he did [VP say Mary left]]]}\]
   \[\text{\quad \textcircled{Feature Movement}}\]

b. \[\text{CP } [+\text{wh}] + C_\text{[Q]} \text{ [TP when [TP he did [VP say Mary left]]]}\]
   \[\text{\quad \textcircled{Deletion}}\]

c. \[\text{CP } [+\text{wh}] + C_\text{[Q]} \text{ [TP when [TP he did [VP say Mary left]]]}\]
Since the wh-phrase is base-generated in a position phonetically adjacent to the moved wh-feature, it need not undergo category movement. Since both the derivation of sluicing and that of VPE for the matrix reading are equally economical, the interpretation in question is available in both the cases.

5.3. T to C Movement

We have just seen that so long as a wh-phrase occupies a position phonetically adjacent to the moved wh-feature, the derivation of sluicing and that of VPE are equally economical. One such case is the example with an adjunct wh-phrase modifying a matrix clause. We have claimed that the wh-phrase in question occupies a position adjoined to Spec-TP of a matrix clause, a position adjacent to the landing site of its wh-feature.

A further natural prediction relating to this case is that if an overt element intervenes between a moved wh-feature in Spec-CP and its category in a position adjoined to Spec-TP, then the wh-phrase should undergo category movement in cases of VPE but not in cases of sluicing. Then, such examples of VPE should result in degradeness or in ungrammaticality. The prediction is borne out by Hartman’s following example.

(43) a. I’m depressed.—Why.
    b. I’m depressed.—*Why are you? (Hartman (2011))
Hartman claims that the ungrammaticality in (43b) is due to a Max Elide effect. Here, the adjunct wh-phrase modifies the matrix clause. This
means that it is based-generated in a position adjoined to Spec-TP as in (37a). The question is why (37a) is grammatical whereas (43b) is not. One difference is the word order; in (43b), the subject you and the auxiliary are inverted. The subject-auxiliary inversion in question is traditionally analyzed as T to C movement. Our claim is that in (43b), the auxiliary functions as an overt intervener between the moved wh-feature in Spec-CP and its category in a position adjoined to Spec-TP. This requires the wh-phrase to undergo category movement in the derivation of VPE but not in that of sluicing, so that the former is less economical than the latter.

Let us see the relevant derivations one by one. If the wh-phrase stayed in situ in the case of VPE, the derivation would result in a violation of the PF Adjacency Condition, as in (44).

\[
(44) \begin{array}{ll}
\text{a. } & [CP C[\{Q\}] [TP why[+WH] [TP you are [VP depressed]]] \\
& \text{Feature Movement} \\
\text{b. } & [CP [+wh] + C[\{Q\}] [TP why [TP you are [VP depressed]]]] \\
& \text{Deletion (VPE)} \\
\text{c. } & [CP [+wh] + C[\{Q\}] [TP why [TP you are [VP depressed]]]] \\
& \text{T to C Movement} \\
\text{d. } & [CP [+wh] + C[\{Q\}] + are_i [TP why [TP you t_i [VP depressed]]]] \\
\end{array}
\]

In the eventual representation in (44d), the auxiliary are intervenes between the moved wh-feature and its category.\(^6\) Thus, the PF Adjacency Condition is not satisfied. An alternative derivation is given in (45), where the wh-phrase undergoes category movement.

\[
(45) \begin{array}{ll}
\text{a. } & [CP C[\{Q\}] [TP why[+WH] [TP you are [VP depressed]]] \\
& \text{Feature Movement} \\
\text{b. } & [CP [+wh] + C[\{Q\}] [TP why [TP you are [VP depressed]]]] \\
& \text{Category Movement (of the Wh-phrase)} \\
\text{c. } & [CP why_i [C^+ [+wh] + C[\{Q\}] [TP t_i [TP you are [VP depressed]]]] \\
& \text{Deletion (VPE)} \\
\text{d. } & [CP why_i [C^+ [+wh] + C[\{Q\}] [TP t_i [TP you are [VP depressed]]]] \\
& \text{T to C Movement} \\
\text{e. } & [CP why_i [C^+ [+wh] + C[\{Q\}] + are_i [TP t_i [TP you t_j [VP depressed]]]]] \\
\end{array}
\]

The wh-phrase moves to Spec-CP, a position adjacent to the wh-feature, so that the PF Adjacency Condition is satisfied. However, this derivation is less economical than the following derivation of (43a).

\(^6\) Here, we assume with Chomsky (2000) that T to C movement is a PF operation.
Here, the auxiliary are is eliminated in its underlying position by deletion (sluicing), so that it does not function as an intervener between the moved wh-feature and its category. This derivation satisfies the PF Adjacency Condition without recourse to category movement. Therefore, the derivation is more economical. Since the derivation of VPE is less economical, it is ungrammatical even though the remnant wh-phrase is the left-edge overt element.

Furthermore, an anonymous reviewer points out that the current analysis makes another prediction regarding T to C movement; when T to C movement does not occur in a matrix clause, Max Elide effects should not be observed. This prediction is also borne out by data of Indian Vernacular English. Let us start by considering the following examples.

(47) Indian Vernacular English
a. What he has eaten?
   b. Why you look worried?
   c. How long ago that was? \hfill (Bhatt (2000))

(47) shows that Indian Vernacular English lacks T to C movement in matrix questions (cf. Bhatt (2000)). With this in mind, let us consider the crucial examples in (48), which are cited from Hartman (2011).

(48) Indian Vernacular English
a. John was baking a cake.—Why he was?
   b. Mary will leave.—When she will? \hfill (Hartman (2011))

Hartman observes that these examples are grammatical. This fact is natural for the current analysis because the derivations of these examples are equally economical to those of their sluicing counterparts given in (49).

(49) a. John was baking a cake.—Why?
   b. Mary will leave.—When?

Let us consider (48a) and (49a), which are derived as shown in (50) and (51), respectively.

(50) a. \[
\begin{align*}
[&CP \ C_{[Q]} \ [TP \ why_{[+WH]} \ [TP \ you \ are \ depressed]]] \\
\end{align*}
\]
\overset{\circ}{\text{Feature Movement}}

b. \[
\begin{align*}
[&CP \ [+wh] \ + \ C_{[Q]} \ [TP \ why \ [TP \ you \ are \ depressed]]] \\
\end{align*}
\]
\overset{\circ}{\text{Deletion (VPE)}}

c. \[
\begin{align*}
[&CP \ [+wh] \ + \ C_{[Q]} \ [TP \ why \ [TP \ you \ are \ depressed]]] \\
\end{align*}
\]
6. Residual Issues

This section discusses some residual issues to be addressed. One is the validity of the non-movement analysis of sluicing. The current account is based on the assumption that remnant wh-phrases in sluicing can stay in situ. However, this assumption is not standard; it has been widely assumed that remnant wh-phrases move to the initial position of a clause (cf. Ross (1969), Merchant (2001), Fox and Lasnik (2003)). Another issue is a lookahead problem. The account proposed in this paper assumes that deletion, an operation in the phonological component, can affect the application of category movement, a syntactic operation. We have claimed that because the PF Adjacency Condition is satisfied by deletion of overt interveners, the application of category movement is unnecessary in cases of sluicing.

6.1. Arguments for the Non-Movement Analysis of Sluicing

Since Ross (1969) first discussed the sluicing construction within the framework of generative grammar, it has been widely assumed that remnant wh-phrases in sluicing move to the initial position of a clause. This seems to be partly because English does not allow wh-phrases to stay in situ in other contexts. If a remnant wh-phrase has to (overtly) move to Spec-CP in cases of sluicing, the economy-based account put forth in this paper cannot be maintained. Kimura (2010), however, points out the possibility of a non-movement analysis of sluicing. Let us review one of Kimura’s empirical arguments.

The argument comes from the distribution of the hell. The hell is an expression which can modify wh-phrases, as shown in (52).

(52) What the hell book did you read that in?

(Lasnik and Saito (1992))

Pesetsky (1987), and Lasnik and Saito (1992) point out that this modifier
cannot co-occur with wh-phrases in situ. The following examples illustrate this point.

(53)  
a. Who read what?

b. *Who read what the hell?  
(Lasnik and Saito (1992))

With this in mind, let us consider the crucial cases.

(54)  
a. They were arguing about something, but I don’t know what.

b. *They were arguing about something, but I don’t know what the hell.  
(Sprouse (2005))

As López (2000), Merchant (2001), and Sprouse (2005) point out, remnant wh-phrases in sluicing disallow modification by the hell. This means that remnant wh-phrases in sluicing pattern together with wh-phrases in situ but not with moved wh-phrases. Given this fact, it is not so implausible to assume that remnant wh-phrases in sluicing may stay in situ.

A question which immediately arises here is why the hell cannot co-occur with wh-phrases in situ. As an anonymous reviewer points out, the answer is crucial for the argument in favor of the non-movement analysis of sluicing. One possible answer is presented by Huang and Ochi (2004), according to which the hell must be licensed in some high position such as a sub-layer of TP, which they dub an “(interrogative) Attitude Phrase.” The licensing is implemented through movement; the hell is first merged with a wh-phrase and then they move together to the specifier position of Attitude Phrase, where the hell is licensed. If this is true, the ungrammaticality of (54b) is explained as a failure in licensing of the hell; the hell does not move to the specifier position of Attitude Phrase. As long as this account is on the right track, (54b) is considered to be a piece of supportive evidence for the non-movement analysis of sluicing.

The non-movement analysis can also be empirically supported by island insensitivity of sluicing, which an anonymous reviewer points out. The crucial data are given below.

(55)  
a. *They want to hire someone who speaks a Balkan language,  
but I don’t remember which they want to hire [\text{they want to hire someone} who speaks \text{t}].  
(Merchant (2001))  
: No Ellipsis

b. They want to hire someone who speaks a Balkan language,  
but I don’t remember which.  
: Sluicing

The ungrammaticality of the regular wh-question has been explained as a violation of the Complex NP Constraint; the wh-phrase moves out of the Complex-NP island indicated by brackets. Of importance is that its sluicing counterpart is grammatical, as shown in (55b). The contrast is appar-
ently mysterious for the standard movement analysis of sluicing, according to which wh-phrases in sluicing move to the clause initial position as those in regular wh-questions. The previous movement analysis has to say something special. In contrast, the non-movement analysis can straightforwardly explain the contrast. (55a) and (55b) are analyzed as below.

(56)  
a. \[ \text{[CP which} \text[i \in C \text{[+wh} \text] + C_{\text{[Q]}} \text{[TP they want to hire [island someone who speaks \text{which}]}}] \]

\[ \text{[CP [+wh] + C_{\text{[Q]}} \text{[TP they want to hire [island someone who speaks \text{which}]}}] \]

The wh-phrase moves out of the island via category movement in (56a) whereas it stays inside the island in (56b). Since Huang (1982), it has been widely assumed that island conditions restrict only overt movement, which can be restated as category movement. The island insensitivity of sluicing indicates that remnant wh-phrases in sluicing can stay in situ.

6.2. Look-Ahead Problem

Another remaining issue is the so-called look-ahead problem. In the current account, deletion, an operation in the phonological component, can be an alternative to category movement, a syntactic operation. How can we decide on the suspension of category movement based on the information attained in the phonological component?

One possible answer is to assume that we can gain the information on deletion in syntax. For example, the [E]-feature proposed by Merchant (2001) enables us to implement this. As we have reviewed in section 4, Merchant claims that this feature instructs PF not to parse its complement and that it is introduced before Spell-Out. We have revised the PF instruction as follows; this feature instructs PF not to parse all the recoverable elements inside the complement whose head has this feature. Once we assume this feature as a trigger of deletion, we can avoid the look-ahead problem.7, 8

7 As an anonymous reviewer points out, global economy in itself may be problematic. For instance, Collins (1997) provides arguments against it based on locative inversion and quotative inversion, claiming that local economy, by which at each step in the derivation the most economical operation is selected, is more attractive. However, it is true that global economy has played a certain role in development of linguistic studies. The present proposal may constitute another piece of evidence for a global economy principle being part of our grammar.

8 An anonymous reviewer questions how we understand “cyclicity” under the [E]-feature-based framework. We assume that phonological operations including deletion apply only once. This is because they carry out after Spell Out and are not regulated by
7. Conclusion

This paper has reduced Max Elide to the derivational economy principle which precludes superfluous steps of derivations. Our main claim is this; the degraded or ungrammatical data involve more derivational steps than the grammatical data.\(^9\)

As long as the whole discussion is on the right track, the Max Elide paradigms present novel arguments for the derivational economy principle. They also provide empirical support in favor of Agbayani and Ochi’s movement theory.

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the PIC (the Phase Impenetrability Condition). This assumption is crucial for our economy-based account; if deletion performed phase by phase, deletion of a larger constituent would involve more steps than that of a smaller constituent.

\(^9\) An anonymous reviewer points out the divergent degree of deviance among the examples which violate the same economy principle. For instance, (1c) is slightly degraded whereas (32b) is completely ungrammatical. Since the issue must be examined in a broader context, we would like to leave it for future research.
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