**Ellipsis as a diagnosis of movements in the expletive *there* and *it* sentences**[*]
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## 1.  Introduction

English expletives *there* and *it*, commonly analyzed as semantically vacuous elements, have been argued by some to exist solely to satisfy the Extended Projection Principle (EPP) requirement of heads like T. Various proposals have been put forward as to where they are initially merged in the structure (for example, Chomsky 2000, Deal 2009 and Kayne 2008 for *there*; Rosenbaum 1967, Stowell 1983 and Kayne 1985 for *it*). Common tools for locating the initial position of contentful elements fail with expletives, such as c-command conditions on anaphora, relative scope and NPI-licensing.

In this squib I present an argument from ellipsis that pinpoints the initial syntactic positions of *there* and *it*. Contrary to common proposals that expletives are directly inserted into Spec, TP in particular to satisfy its EPP requirement (Chomsky 2000), I argue that they are initially merged within vP or lower, which is consistent with Deal (2009) or Kayne (2008). Building on Takahashi and Fox's (2005) proposal concerning MaxElide based on Merchant (2008), and Hartman's (2011) extension of their proposal, I argue that *there* and *it* have not only undergone A-movement from a lower position to Spec, TP, but that their traces are interpreted in the same way as the A-traces of semantically contentful elements.

## 2.  VP-Ellipsis as a Diagnostic Tool for Movement

I begin by presenting the paradigm of sluicing, i.e. TP-ellipsis, and VP-ellipsis (VPE) of expletive subjects and non-expletive subjects that will form the foundation of my argument.

**Non-expletive subject** (Hartman 2011)
(1) **Embedded question + *Wh*-Object: ✓ Sluicing; *VP-ellipsis**
    John will eat something, but I don't know what (*he will).

(2) **Embedded question + *Wh*-Adverbial: ✓ Sluicing; ✓ VP-ellipsis**
    John will leave, but I don't know when (he will).

(3) **Matrix question + *Wh*-Object: ✓ Sluicing; *VP-ellipsis**
    Speaker A: Mary will eat something.
    Speaker B: What (*will she)?

(4) **Matrix question + *Wh*-Adverbial: ✓Sluicing; \*VP-ellipsis**
  Speaker A: Mary will leave.
  Speaker B: When (\*will she)?

***There* subject**
(5) **Embedded question + *Wh*-Object: ✓Sluicing; \*VP-ellipsis**
  There will be something in the room, but I don't know what (\*there will).[1]

(6) **Embedded question + *Wh*-Adverbial: ✓Sluicing; ✓VP-ellipsis**
  There will be a party, but I don't know exactly when (there will be).

(7) **Matrix question + *Wh*-Object: ✓Sluicing; \*VP-ellipsis**
  Speaker A: There will be something in the room.
  Speaker B: What (\*will there)?[2]

(8) **Matrix question + *Wh*-Adverbial: ✓Sluicing; \*VP-ellipsis**
  Speaker A: There will be a party sometime.
  Speaker B: When (\*will there be)?

***It* subject**
(9) **Embedded question + *Wh*-Object: ✓Sluicing; \*VP-ellipsis**
  We all know that it will be possible for scientists to achieve something in ten years,
  but we don't know what (\*it will be ~~possible for scientists to achieve~~).

(10) **Embedded question + *Wh*-Adverbial: ✓Sluicing; ✓VP-ellipsis**
  We all know that it will be possible for scientists to achieve something in ten years,
  but we don't know how (it will be).

(11) **Matrix question + *Wh*-Object: ✓Sluicing; \*VP-ellipsis**
  Speaker A: It will be possible for scientists to achieve something in ten years.
  Speaker B: What (\*will it be ~~possible for scientists to achieve~~)?

(12) **Matrix question + *Wh*-Adverbial: ✓Sluicing; \*VP-ellipsis**
  Speaker A: It will be possible for scientists to achieve something in ten years.
  Speaker B: How (\*will it be)?

*There* and *it* behave exactly like the non-expletive subject in the ellipsis paradigm above: while sluicing is always possible, VPE is only allowed in an embedded question with an *wh*-adverbial. Hartman (2011) has argued that the initial position and subsequent movement of the subject are crucial in accounting for the paradigm for non-expletive subjects. If he is correct, then the fact that an identical paradigm is observed for expletives may be taken as an indication that their derivational history is identical in relevant respects. In the next section, I review his argument.

## 2.1 Parallelim and MaxElide

First, note that movement out of the ellipsis site is crucial to ruling out VPE. If nothing moves out, VPE becomes possible. Example (13) thus contrasts with (1):

(13) John will eat something, and Mary will too.

Assuming the trace of *wh*-movement is a variable at LF, Takahashi and Fox (2005) captures the effect of this movement step with a semantic condition on the licensing of ellipsis, building on Rooth (1992), Heim (1997) and Merchant (2008):

(14) **Licensing condition for ellipsis**
　　For ellipsis of elided constituent (EC) to be licensed, there must exist a constituent
　　which dominates EC and satisfies the condition in (15). [Call this constituent the
　　*parallelism domain* (PD).]

(15) **Parallelism**
　　α is a PD if and only if it is semantically identical to another constituent (antecedent
　　constituent, AC), modulo focus-marked constituents.

(16) **MaxElide**
　　Given a choice of PD, elide the biggest deletable constituent dominated by it.

To demonstrate how to select an elided constituent with this theory, I use (1) as an example. As the first part of a two-step process, we should find a parallelism domain. If VP were to be elided, the smallest constituent that dominates it would be VP itself. However, it is not a licit PD because the *wh*-trace is not bound within it. Because a free variable cannot be semantically identical to a corresponding element in the AC, all variables must be bound within the PD. So the smallest PD is what immediately dominates the binder of the *wh*-trace, which is the underlined portion below:

(17) …but I don't know what $[\underline{\lambda x \text{ he will }} [_{vP} \text{ eat } \text{what}_x]]$

After identifying a PD, the next step is to apply MaxElide, the principle that favors ellipsis of the biggest elidable constituent. Since the PD in (17) is large enough to include both TP and VP, MaxElide chooses sluicing and blocks VPE.

## 2.2 Ellipsis as an Argument for the vP-Internal Subject Hypothesis

Consider now the possibility that not only does the last movement step create a binder, but also the successive-cyclic movement steps as well. If the intermediate *wh*-movement creates a binder of the trace, the PD can be as small as the domain of that intermediate binder, underlined below. And since VPE is the only option in this PD, MaxElide has to choose it, contrary to fact.

(18) …but I don't know what $\lambda$y he will y $[\lambda x \, [_{vP} \text{ eat } \text{what}_x]]$

The problem is resolved if we follow Hartman (2011) and treat A-traces as variables that require binding in the PD as well. Assuming the vP-internal origin of the subject, its raising expands the PD to the domain of the subject's lambda binder, $\lambda$zP in (19). If no other element moves out of $\lambda$zP, it would be a licit PD, in which VPE satisfies MaxElide. However, because the object Ā-moves, the PD must be expanded to the domain of the binder of its trace, i.e. $\lambda$yP. MaxElide then chooses sluicing over VPE within this PD. In order to isolate the effect of A-movement of the subject, let us compare an analysis like this, which assumes a vP-internal position for the subject, with another analysis that assumes the subject starts vP-externally. I call the former analysis Type I and the latter Type II.

(19) **Type I analysis: vP-internal origin of the subject**
     …but I don't know $[_{CP} \text{ what } [\lambda y \, [_{TP} \text{ he } [\lambda z \text{ will } \text{what}_y \, [\lambda x \, [_{vP} \text{ he}_z \text{ eat } \text{what}_x]]]]]]$

Holding everything else constant, if the subject originates outside vP, for example in Spec, TP, the prediction would be that VPE is possible:

(20) **Type II analysis: vP-external origin of the subject**
     …but I don't know $[_{CP} \text{ what } [\lambda y \, [_{TP} \text{ he will } \text{what}_y \, [\lambda x \, [_{vP} \text{ eat } \text{what}_x]]]]]$

If the subject starts out in Spec, TP, the domain of the intermediate Ā-binder, i.e. $\lambda$xP, will be a possible PD, in which VPE satisfies MaxElide. Therefore, assuming that intermediate traces have the same status as variables just like the tail of the chain,[3] Hartman's analysis can be taken as evidence that non-expletive subjects originate in or below vP.

**2.3   *There* and *it* are vP-Internal**

Having examined the effect of the non-expletive subject's A-movement on VPE, I will now apply this test to the expletives to diagnose their base position.

       The paradigm presented at the beginning of section 2 and partly repeated below shows that *there* and *it* behave exactly like the non-expletive subject: VPE is ruled out with a *wh*-object, which contrasts with the possibility of sluicing and the non-elliptical construction.

       The pattern exhibited by expletive subjects mirrors that of contentful elements in another way as well. According to Takahashi and Fox's definition of Parallelism, adding intervening focus between the variable and the binder saves the otherwise impossible ellipsis option. The expletive sentences behave as predicted, as (23) shows that intervening focus improves VPE.

(21) **Embedded question +** *Wh*-**Object: ✓Sluicing; *VP-ellipsis**
    a. There will be something in the room, but I don't know what (*there will).
    b. We all know that it will be possible for scientists to achieve something in ten years, but we don't know what (*it will be).

(22) **Non-ellipsis is possible**
    a. I don't know what there will be in the room.
    b. I don't know what it will be possible for scientists to achieve in ten years.

(23) **Focus saves VPE**
    a. ?I know what there WILL be in the room, but I don't know what there WON'T.[4]
    b. ?While we know what it WAS possible for scientists to achieve in the past, one may wonder what it WILL be in the future.

The badness of VPE when an expletive construction also hosts object Ā-movement can be explained if we adopt a Type I analysis, i.e. the vP-internal origin site of the subject. Taking *there* as an example, only if it A-moves can we expand the PD to the domain of its lambda binder, which is λzP in (24). Because λzP "catches" the object's intermediate Ā-trace, the PD must be enlarged again to include its binder λy. Then MaxElide chooses sluicing and blocks VPE.

(24) **Type I analysis: vP-internal origin of *there* – correct**
    …but I don't know [$_{CP}$ what [λy [$_{TP}$ there [λz will ~~what$_y$~~ [λx [$_{vP}$ ~~there$_z$~~ be ~~what$_x$~~]]]]]]

The Type II analysis, which assumes a high insertion position of *there*, makes the wrong prediction. Without the expletive's A-movement, the PD can be as small as the domain of the intermediate binder of the *wh*-object, and VPE would be chosen as the only ellipsis option.

(25) **Type II analysis: vP-external origin of *there* – incorrect**
    …but I don't know [$_{CP}$ what [λy [$_{TP}$ there will ~~what$_y$~~ [λx [$_{vP}$ be ~~what$_x$~~]]]]]

The parallel paradigm for expletive *it* is shown below, suggesting that it also originates in vP:

(26) **Type I analysis: vP-internal origin of *it* – correct**
    …but I don't know [$_{CP}$ what [λy [$_{TP}$ it [λz will ~~what$_y$~~ [λx [$_{vP}$ ~~it$_z$~~ be possible for scientists to achieve ~~what$_x$~~ in ten years]]]]]]

(27) **Type II analysis: vP-external origin of *it* – incorrect**
    …but I don't know [$_{CP}$ what [λy [$_{TP}$ it will ~~what$_y$~~ [λx [$_{vP}$ be possible for scientists to achieve ~~what$_x$~~ in ten years]]]]]]

It is important to note at this point that while the MaxElide diagnostic test shows the origination site of *there* and *it* to be somewhere in vP or lower, it cannot pinpoint its exact location. For instance, other than Chomsky's (2000) proposal about the initial merge of *there* in TP, Deal (2009) argues that *there* is base generated in vP in order to account for the range of predicates compatible with it. Kayne (2008), on the other hand, proposes an even lower site for *there* in DP together with the associate.

The ellipsis test cannot adjudicate between Deal and Kayne. If Kayne is correct that *there* originates low in DP, it will stop in Spec, vP on its way, on the assumption that vP is a phase. From this edge position upwards, its movements will be the same as shown in the Type I analysis, predicting the same results as Deal's proposal. Below vP, there is no more ellipsis option in English other than VPE, so the expletive's starting position will not matter to the paradigm, and MaxElide will not be able to predict different ellipsis possibilities.

Likewise, this test cannot pinpoint *it*'s origination site. For instance, both Rosenbaum (1967) and Stowell (1983, 1991) argue that *it* merges low along with the clause, but the former claims the whole constituent is a complex NP, whereas the latter proposes a small clause structure. The MaxElide test is inconclusive in determining whether *it* initially merges with the clause or starts higher.

Furthermore, this test does not show whether *there* and *it* are base generated as part of a complement, specifier or adjunct. All that can be determined is that they have been in the vP domain in the derivation, lower than the intermediate trace of the *wh*-object.

## 3.   Movement of Elements Other Than the Object

### 3.1   Non-expletive subjects

Recall that what rules out VPE in cases where the subject originates vP-internally and MaxElide prefers sluicing is the additional movement out of the domain of the subject's lambda binder, which forces the PD to expand further.

This predicts that if the moving element starts above the subject's lambda binder, VPE should be allowed, as Hartman notes and exemplifies with examples of adjunct *wh*-movement.

(28) **Embedded question + *Wh*-Adverbial: ✓ Sluicing; ✓ VP-ellipsis**
     John will leave, but I don't know when (he will).

Assuming that the adverbial may be introduced above the subject, the optionality of sluicing and VPE results from two possible PDs.

(29) …but I don't know [$_{CP}$ when [λy ~~when~~$_y$ [$_{TP}$ he [λx will [$_{vP}$ ~~he~~$_x$ leave]]]]]]

| 1. Possible PDs: | λyP | λxP |
|---|---|---|
| 2. MaxElide chooses: | sluicing | VP-ellipsis |

Conversely, if the moving element starts below the subject's lambda binder, VPE should be ruled out. And it does not matter what element moves or what type of movement it is, for example T-to-C movement is shown to have the same effect.

(30) **Matrix question + *Wh*-Adverbial: ✓ Sluicing; \*VP-ellipsis**
    Speaker A: Mary will leave.
    Speaker B: When (\*will she)?

Raising of the vP-internal subject always expands the PD to the domain of its lambda binder, λyP below. Instead of moving the object, now it is the head movement that expands the PD further to the domain of the binder of that trace, namely λzP. Note that λzP is already sufficiently large for MaxElide to rule out VPE. But the high adverbial *wh*-moves in addition, which again expands the PD to λxP, and MaxElide chooses sluicing over VPE.

(31) **Head movement rules out VPE**
    [$_{CP}$ When [λx will [λz [$_{TP}$ ~~when~~$_x$ [$_{TP}$ she [λy ~~will~~$_z$ [$_{vP}$ ~~she~~$_y$ leave]]]]]]]]

As we have seen, it is the head movement step that expands the PD to the domain of its lambda binder, and consequently VPE is ruled out by MaxElide. It should not matter what the additional *wh*-extracted element is and where it starts from. For example, a matrix question with an *wh*-object disallows VPE:

(32) **Matrix question + *Wh*-Object: ✓ Sluicing; \*VP-ellipsis**
    Speaker A: Mary will eat something.
    Speaker B: What (\*will she)?

## 3.2 Expletives

As (1) - (12) show, *there* and *it* behave exactly the same as non-expletive subjects across the entire ellipsis paradigm. This once again provides evidence for A-movement of the expletive from Spec, vP to Spec, TP. The binder of its A-trace marks the critical "dividing point" – movement of another element from above it allows VPE, such as adjunct *wh*-movement:

(33) **Embedded question + *Wh*-Adverbial: ✓ Sluicing; ✓ VP-ellipsis**
    a.   There will be a party, but I don't know exactly when (there will be).

b.  We all know that it will be possible for scientists to achieve something in ten years, but we don't know how (it will be).

In contrast, movement of an element from below the expletive's lambda binder prohibits VPE, such as T-to-C movement. Whether the *wh*-element is object or adverbial, VPE will be ruled out in matrix questions:

(34) **Matrix question +** ***Wh*-Adverbial: ✓ Sluicing; *VP-ellipsis**
    a.  Speaker A: There will be a party sometime.
        Speaker B: When (*will there be)?
    b.  We all know that it will be possible for all cars to be driverless in ten years, but the question is how (*will it be)?

(35) **Matrix question +** ***Wh*-Object: ✓ Sluicing; *VP-ellipsis**
    a.  Speaker A: There will be something in the room.
        Speaker B: What (*will there be)?

    b.  We all know that it will be possible for scientists to achieve something in ten years, but the question is what (*will it be ~~possible for scientists to achieve~~)?

Note that it is the position of the moved element that matters rather than some kind of fundamental object/ adjunct asymmetry. If we force an adjunct to originate below the expletive's lambda binder, it behaves just like an object in that its Ā-extraction also prohibits VPE.

(36) There should be a riot for a certain reason.
    a.  There is a particular reason for the desirability of a riot. (High reading – *why >> should*)

    b.  It should be the case that any reason produces a riot.  (Low reading – *should >> why*)

Because the low reading is associated with the adverbial starting lower than the modal, this means that it is also lower than the expletive subject's lambda binder. As is predicted, VPE is not possible:

(37) a. There should be a riot for a certain reason, and I wonder why.
      Sluicing: ✓ High reading; ✓ Low reading

    b. There should be a riot for a certain reason, and I wonder why there should be.
      VP-ellipsis: ✓ High reading; *Low reading

Likewise, *it* behaves just like *there*:

(38) I don't know how it will be possible for John to repair the car.
   a.   A particular reason enables John to repair the car. (High reading – *how >> possible*)

   b.   John can repair the car with a wrench. (Low/ Embedded reading – *possible >> how*)

(39) a. It will be possible for John to repair the car, I just don't know how.
        Sluicing: ✓High Reading; ✓Low Reading

   b. We all know it will be possible for John to repair the car, we just don't know how it will be.
      VP-ellipsis: ✓High Reading; *Low Reading

## 4.   Successive-Cyclic A-Movement Leads to Multiple VP-Ellipsis Possibilities

Not only does A-movement of an expletive affect ellipsis possibilities, but the intermediate movement step in a successive-cyclic chain does so as well.

(40) **Raising + High adverbial: ✓High VP-ellipsis; ✓Low VP-ellipsis**
    In New York there seems to be a train leaving, and in Boston there does / seems to as well.

This is due to the fact that each intermediate movement step leaves a binder for the trace of the previous step. This gives rise to multiple possible PDs, each one of them being the domain of a lambda binder.

(41) ... in Boston there $[\lambda y$ does $[_{vP}$ seem $[_{TP}$ ~~there~~$_y$ $[\lambda x$ to $[_{vP}$ ~~there~~$_x$ be a train leaving$]]]]]$

| 1. Possible PDs: | λyP | λxP |
|---|---|---|
| 2. MaxElide chooses: | High VP-ellipsis | Low VP-ellipsis |

It is worth noting that replacing the high adjunct *in Boston* with a low one *for Boston* rules out both VPE options:

(42) **Raising + Low adverbial: \*High VP-ellipsis; \*Low VP-ellipsis**
    For New York there seems to be a train leaving, and for Boston (\*there does / seems to) as well.

This is predicted under the assumption that the adverbial is topicalized from its base position to a position higher than the expletive subject. Its interaction with the subject's A-movement expands the PD to the domain of the lambda binder of the highest trace of topicalization, i.e. λvP below. MaxElide chooses sluicing over VPE in this PD.

(43) ... for Boston [λv there [λy does [~vP~ ~for Boston~v [λw [~vP~ seem [~TP~ ~there~y [λx to [~vP~ ~for Boston~w [λz [~vP~ ~there~x be a train leaving ~for Boston~z]]]]]]]]]]]

In contrast, in (40) the high adverbial originates above the expletive subject, therefore the topic movement is outside the PD and does not make the PD bigger.

Similar to *there*, *it* permits both high and low VPE as well, which is evidence for its successive-cyclic A-movement:

(44) **Raising: ✓High VP-ellipsis; ✓Low VP-ellipsis**
    Speaker A: It must have been a shock to witness the murder.
    Speaker B: Indeed, it must (have been).

Thus, as summarized in table 1, the expletives *there* and *it* behave exactly the same as their non-expletive counterpart in terms of the ellipsis possibilities. The reader may check Hartman (2011) for more examples with a non-expletive subject.

**Table 1**

**5.   Conclusion**

I have argued that if the ellipsis paradigm of non-expletive subjects is explained by their A-movement from a position within vP, the same analysis must be extended to the expletives *there* and *it*. This argument is crucially conditional on Hartman's claim that A-movement creates variable binding configurations to which the parallelism condition on ellipsis is sensitive.[5]

As Hartman (2011) has observed, semantically vacuous movement of otherwise contentful elements creates relevant variable-binding effects. One such example is T-to-C movement of *do* in matrix questions, which is commonly assumed to be meaningless.

Expletives, on the other hand, are semantically vacuous themselves, but their movement creates binders for variables just like the movement of contentful elements does.

Therefore, observations about head movement and expletive movement together can be taken as evidence that movement always has semantically relevant consequences, and does so mechanically, independent of the semantics with which they may interact.

It is not unprecedented that movement of a semantically vacuous element can have LF effects. For instance, the raising analysis for relative clauses (Kayne 1994, Bianchi 2000 and Bhatt 2002) argues that a null operator moves to their head. Also, Nissenbaum's (1998) analysis of parasitic gaps depends on the movement of a null

operator to the edge of the adjunct clause, which creates a binder for the parasitic gap. Various analyses for *tough* constructions converge on a null operator moving from within the embedded clause to its edge (Chomsky 1981 and Hikks 2009). However, the fact that these operators are silent makes it difficult to observe their existence in PF. My analysis completes the picture by showing that expletives, the overt counterpart of the null operator, create similar binding configurations via syntactic movement. Below is a summary of various types of movements with their semantically relevant consequences.

**Table 2**

If the expletives' syntactic movement creates a binder for the trace, questions arise about the nature of this movement, and how it generates semantic effects. If we follow Deal (2009) or Kayne (2008) that *there* externally or internally merges in Spec, vP, its trace cannot be of type $<e>$, the common type of a null operator trace. If its trace in Spec, vP is of type $<e>$, it will have to combine with an unaccusative predicate that is already saturated with an internal argument, which leads to type mismatch. If the trace of *there* can't be $<e>$, it is then worth reexamining the semantics of the expletives. For example, imagine that instead of being completely vacuous, expletives are in fact identity functions of type $<<s,t>,<s,t>>$. Their A-movement leaves a trace of the same type, which is why it is difficult to observe their presence at LF by common methods such as scopal interactions. Nonetheless, their movement does create binders for variables that the parallelism condition of ellipsis is sensitive to.

As is mentioned before, instead of appearing in Spec, vP, the expletives may occur in some other position as long as it is below the intermediate trace of a *wh*-object in Spec, vP. These other merger positions may lead to a different semantic analysis of the expletives, depending on the sister they combine with. Regardless of the semantic definition of the expletives, the ellipsis test suggests that the traces of expletives are interpreted in the same way as those of contentful elements.

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**Table 1**

| *Wh*-element | Non-expletive subjects | *There* | *It* |
|---|---|---|---|
| Embedded questions | | | |
| Object | * | * | * |
| High Adverbial | ✓ | ✓ | ✓ |
| Low Adverbial | * | * | * |
| Matrix questions | | | |
| Object | * | * | * |
| Adverbial | * | * | * |
| Raising | | | |
| High VPE | ✓ | ✓ | ✓ |
| Low VPE | ✓ | ✓ | ✓ |

**Table 2**

| Movement type | Moved element | Creates binding configurations affecting ellipsis? | Has other observable semantic effects? |
|---|---|---|---|
| Null Operator Movement | - Semantically vacuous<br>- Phonologically null | N/A | Yes |
| T-to-C Movement | - Semantically contentful<br>- Phonologically overt | Yes | No |
| Expletive Movement | - Semantically vacuous<br>- Phonologically overt | Yes | No |

## Notes

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[1] One might claim that (5) is bad with VPE because there is an independent requirement to pronounce the copula in VPE. Adding the copula to (5) will render it non-elliptical: *There will be something in the room, but I don't know exactly what there will be.* If the extracted *what* is further embedded, however the judgment remains:

(i)   There will be an inventor of something important at the party, but I can't remember what (*there will be).

The starred version can only be VPE in this example. I'm grateful to Brian Dillon for suggesting this construction to me.

[2] Again, one may substitute (7) with a sentence embedding the *wh*-object in a DP:

(i)   Speaker A: There will be an inventor of something important at the party.
        Speaker B: What (*will there be)?

[3] In support of the claim that the intermediate Ā-movement step creates a binder, some speakers accept (i):

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

The transitive verb *say* is chosen to make sure there is an argument being elided. To permit sluicing here, the PD must be λyP, λy being the binder left by the intermediate Ā-movement in the embedded Spec, CP:

(ii)   …I forget when λz [$_{TP}$ he [$_{VP}$ said [$_{CP}$ ~~when$_z$~~ [λy [$_{TP}$ ~~when$_y$~~ [$_{TP}$ Mary would leave]]]]]]

[4] Again, further embedding the extracted *what* does not change the judgment. Compare the following sentence with the one in footnote 1:

(i) I know what there WON'T be an inventor of at the party, but I don't know what there WILL be.

[5] An alternative to Hartman's proposal is advanced by Messick and Thoms (2016), who argue for replacing MaxElide with a syntactic notion of parallelism and a generalized economy condition, removing A-traces from the calculation of parallelism. If A-traces don't count, this diagnostic test will not hold because it crucially relies on the claim that A-movement of the expletive has the same effect as that of the non-expletive subject in creating variable binding configurations.

A-movement is certainly not completely traceless at LF, as a trace is required in the relevant position to receive theta-role. A-traces also participate in anaphora binding and reconstruction, as shown, for example, by Fox (1999), Lebeaux (2009), and Iatridou and Sichel (2011). Also, van Urk (2015) has presented evidence from depictives that A-traces are variables to be abstracted over at LF. It is not clear how A-traces take part in this range of configurations with syntactic and semantic consequences, but not the binding configuration considered by the parallelism condition of ellipsis.

According to Messick and Thoms, while A-traces are ignored, Ā- and head movement traces still count in calculating parallelism. If even the trace of T-to-C movement is visible to the parallelism condition, a movement acknowledged by them to be driven by a PF condition, it is curious why an A-trace should be ignored.

However, the issues pointed out by Messick and Thoms are serious, and I leave it to further research how to reconcile Hartman's analysis with theirs.