

**On ellipsis:
Is material that is phonetically absent but semantically present present or absent
syntactically?**

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From the earliest days of transformational generative grammar, ellipsis has been a target of investigation. VP ellipsis, as in (1), was already discussed by Chomsky (1955).

(1) Mary will solve the problem and John will ~~solve the problem~~ too

Analyzing such phenomena as involving deletion, Chomsky (1965) formulated a general principle of recoverability of deletion, formalizing a notion of ‘identity’ between the antecedent and target of deletion. By the late 1960's, there was intensive debate about whether the generative derivation of ellipsis constructions does involve ‘deletion under identity’ of material that was present in underlying form, or, alternatively, ‘interpretive’ copying of the antecedent into a position that was underlyingly empty. Ross (1969) was a very important contribution to the debate, providing detailed arguments for an analysis of ‘Sluicing’, as in (2), in terms of movement of a wh-phrase followed by deletion of the residual sentence.

(2) Mary will hire someone. Guess who ~~Mary will hire~~

This debate persists to the present day, with a third important player: proposals like that of Culicover and Jackendoff (2005) that an ellipsis site contains no structure at all at any level of representation. I will argue that there is, indeed, structure, in at least some ellipsis sites. Further, though the two structural approaches might seem to be mere notational variants, I will survey a range of facts and arguments, several of them originally from Ross, some of them new, that can tease them apart. Thus, Following Ross (1969) and Merchant (2001) I will argue for the original deletion approach.

The apparent amelioration of ‘island’ effects under (some) ellipsis processes is a major potential problem, but I will suggest (developing ideas of Uriagereka (1999) and of Fox and Pesetsky (2003)) how islands can be construed as P(honological) F(orm) effects, hence, plausibly ameliorated by PF deletion.

I. Three approaches to fragments

I begin by summarizing the three major approaches to ellipsis. For reasons of space, I will focus on just one ellipsis phenomenon, the one dubbed ‘Sluicing’ by Ross (1969):

(3) Mary will see someone, but I don't know who

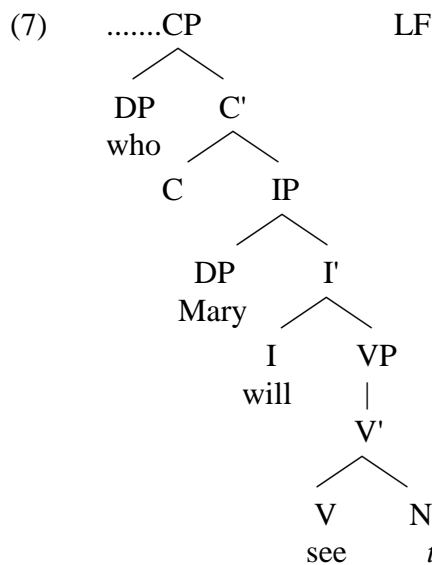
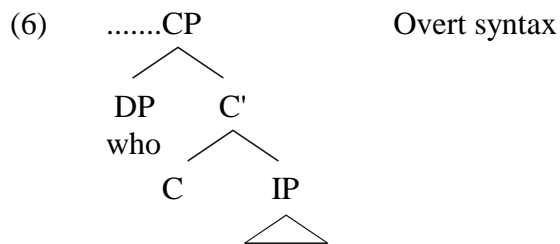
According to the no internal structure approach, we have (4).

- (4)DP
who

WYSIWYG: No structure to the ellipsis site at any level. The interpretation of the fragment as clausal is given by very abstract semantic processes.

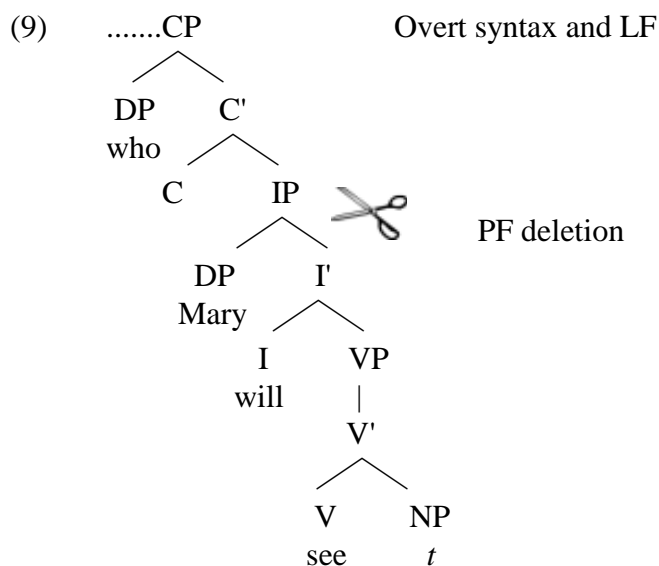
The LF copying approach maintains that there is full internal structure, but only at the level of LF:

- (5) **LF copying** approach: Elided and corresponding non-elided sentences are identical at LF and only at LF.



Finally, under the PF deletion approach, the ellipsis site is fully represented syntactically, and is simply not pronounced:

- (8) **PF deletion** approach: Elided and corresponding non-elided sentences are identical except at the level of PF.



There is a classic argument, due to Ross (1969), for internal structure in an ellipsis site (Sluicing in this case). Ross observes that when a sluicing fragment is the subject of a sentence, agreement with the verb seems to fail:

- (10) We were supposed to do some problems for tomorrow, but which problems isn't (*aren't) clear

The form of the verb is the default third person singular that we expect with a clausal subject as in the non-elliptical version of (10):

- (11) We were supposed to do some problems for tomorrow, but which problems we were supposed to do isn't (*aren't) clear

Thus, even when the Sluicing fragment is plural, agreement is invariably singular, indicating that the fragment is not just a DP, but an entire CP. Culicover and Jackendoff (2005) (henceforth C&J), in arguing for a WYSIWYG approach, respond by conceding that the fragment is a clause, but a very rudimentary clause containing only a DP, so WYSI(almost)WYG

Another traditional class of arguments for internal structure involves so-called connectivity effects. Such effects are straightforward with a classical movement and deletion account of Sluicing, for example (and also for an LF copying approach, under the assumption that, for instance, anaphors are licensed at LF). A representative instance is:

- (12) They_i found some pictures of themselves_i, but I don't know exactly how many pictures of themselves_i [~~they found t~~]

The underlying structure of the example provides just the configuration needed to license the reflexive:

- (13) ... they_i found exactly how many pictures of themselves_i,

With respect to connectivity, C&J counter-argue that such effects are also found in constructions where there is no such straightforward licensing underlying form. They present clefts as the main exemplar:

- (14) It was pictures of themselves_i that they_i found

One of the main connectivity effects C&J mention is one alluded to by Ross, and explored in great detail by Merchant (2001) - Case matching. The following generalization holds overwhelmingly:

- (15) In overtly Case inflected languages, the Case of the survivor is just what the Case of the fronted WH expression would have been in the non-elliptical form.

(16)-(17) illustrate this generalization for German.

- (16) Er will jemandem schmeicheln, aber sie wissen nicht,
he wants someone.DAT flatter but they know not
 *wer / *wen / wem
who.NOM who.ACC who.DAT

'He wants to flatter someone, but they don't know who'

- (17) Er will jemanden loben, aber sie wissen nicht,
he wants someone.ACC praise but they know not
 *wer / wen / *wem
who.NOM who.ACC who.DAT

'He wants to praise someone, but they don't know who'

Compare

- (18) Er will jemandem schmeicheln, aber sie wissen nicht,
he wants someone.DAT flatter but they know not
 *wer / *wen / wem er schmeicheln will
who.NOM who.ACC who.DAT he flatter wants
 'He wants to flatter someone, but they don't know who he wants to flatter'

- (19) Er will jemanden loben, aber sie wissen nicht,
he wants someone.ACC praise but they know not
 *wer / wen / *wem er loben will
who.NOM who.ACC who.DAT he praise wants
 'He wants to praise someone, but they don't know who he wants to praise'

Consider now C&J's suggestion that such connectivity could be handled in the way connectivity is handled in clefts (whatever that way may be). The difficulty with that suggestion is that clefts generally **don't** show Case connectivity. Much more often, there is a specific invariant Case for the pivot in a cleft, usually nominative. For example, Greek has Case matching in Sluicing. Yet cleft pivots are invariably nominative, as Merchant notes:

- (20) I astinomia anerkrine enan apo tous Kiprious prota, ala dhen ksero
the police interrogated one_{acc} from the Cypriots first but not I.know
 { *pjos / pjon }.
which_{nom} / which_{acc}
 { pjos itan / *pjon itan }.
which_{nom} it was / which_{acc} it was

Turkish shows the same pattern, as reported by Ince (2005) (though Jaklin Kornfilt questions whether this construction really is clefting):

- (21) A: Dün Ahmet biri-ni ara-di.
yesterday Ahmet-nom one-acc call-pst-3s
 ‘Yesterday Ahmet called someone’
 B: Kim-i ?
who-acc
 ‘Who?’
- (22) Ahmet-in oku-dugu kitap(dir).
A.-gen read-comp book-nom-(is)
 ‘It’s a book that Ahmet read’

Craenenbroeck (2004) observes the same thing in the Dutch dialects (such as the Waubach dialect) that overtly mark Case on wh-pronouns.

- (23) A: 't Kumt murrege inne noa 't fees
it comes tomorrow someone to the party
 B: Wea? / *Wem?
who_{nom} / who_{acc}
 A: Someone is coming to the party tomorrow. B: Who?
- (24) A: Ich han inne gezieë. B: *Wea? / Wem?
I have someone seen who_{nom} / who_{acc}
 A: I saw someone. B: Who?
- (25) Wea / *Wem is dat dea noa 't fees kemp
who_{nom} / who_{acc} is that REL to the party comes
 Who is it that is coming to the party?
- (26) Wea / *Wem is dat dea-s-te gezieë has
who_{nom} / who_{acc} is that REL-AGR-you seen have
 Who is it that you saw?

Chung (2005) presents a powerful new, though somewhat indirect, argument for internal structure in an ellipsis site. The argument is based on a special kind of Sluicing, dubbed 'Sprouting' by Chung et al. (1995). In standard Sluicing, as in (2), there is an indefinite in the antecedent, corresponding to the wh-trace in the ellipsis site. In Sprouting, there is no such antecedent. Chung observes that when the antecedent would have been a PP, the Sluicing fragment must also be a PP, and not a mere DP. (27)-(32) are several of Chung's English examples.

- (27)a They're jealous, but it's unclear of who
 b *They're jealous, but it's unclear who
- (28)a Joe was murdered, but we don't know by who(m)
 b *Joe was murdered, but we don't know who(m)
- (29)a Last night he was very afraid, but he couldn't tell us of what
 b *Last night he was very afraid, but he couldn't tell us what
- (30)a Mary was flirting, but they wouldn't say with who(m)
 b *Mary was flirting, but they wouldn't say who(m)
- (31)a We're donating our car, but it's unclear to which organization
 b *We're donating our car, but it's unclear which organization
- (32)a U.N. is transforming itself, but into what is unclear
 b *U.N. is transforming itself, but what is unclear [All from Chung (2005)]

It is worthy of note that even when the preposition is predictable, as in several of the above examples, it still must show up in the 'Sprouting' construction (Sluicing with no antecedent for the wh). This is in sharp contrast with standard Sluicing (in a language allowing preposition stranding, like English). In these instances, the preposition is optional in the fragment:

- (33) They're jealous of someone, but it's unclear (of) who
 (34) Joe was murdered by someone, but we don't know (by) who
 (35) Last night he was very afraid of something, but he couldn't tell us (of) what
 (36) Mary was flirting with someone, but they wouldn't say (with) who
 (37) We're donating our car to some organization, but it's unclear (to) which organization
 (38) U.N. is transforming itself into something, but (into) what is unclear

The presence of some prepositions seems entirely formally motivated, as in (27) and (29), but even these must show up in Sprouting. A possibly even clearer case is:

- (39)a She proved a theorem
 b Her proof *(of) a theorem
- (40)a He proved something, but I don't know what
 b He was evaluating a proof, but I don't know of what
 c *He was evaluating a proof, but I don't know what

COMPARE

- (41) He was evaluating a proof of something, but I don't know (of) what

Significantly, this pattern in Chung's examples is not unique to English. It shows up, as Chung observes, in other languages with preposition stranding:

DANISH

- (42) Peter råber til en eller anden, men jeg ved ikke (til) hvem
 Peter shouts to one or other, but I know not (to) who
- (43) Peter er jaloux på en eller anden, men jeg ved ikke (på) hvem
 Peter is jealous on one or other, but I know not (on) who

- (44)a Peter råber, men jeg ved ikke til hvem
Peter shouts, but I know not to who
b *Peter råber, men jeg ved ikke hvem.
Peter shouts, but I know not who
- (45)a Peter er jaloux, men jeg ved ikke på hvem
Peter is jealous, but I know not on who
b *Peter er jaloux, men jeg ved ikke hvem
Peter is jealous, but I know not who

NORWEGIAN

- (46) Per har snakket med noen, men jeg vet ikke (?med) hvem
Per has spoken with someone, but I know not (with) who
- (47) Per er sjalu på noen, men jeg vet ikke (?på) hvem
Per is jealous on someone, but I know not (on) who
- (48)a Per spilte en duett, men jeg vet ikke med hvem
Per was playing a duet, but I know not with who
b *Per spilte en duett, men jeg vet ikke hvem.
Per was playing a duet, but I know not who
- (49)a Per er sjalu, men jeg vet ikke på hvem.
Per is jealous, but I know not on who
b *Per er sjalu, men jeg vet ikke hvem
Per is jealous, but I know not who

As Chung observes, "The message seems to be that we must look beyond semantics and pragmatics to account for the contrasts..." That is, there is a formal identity condition at work here. More abstract purely semantic processes are ill equipped to handle this. Thus, LF copying (6)-(7) or PF deletion (9), and not WYSIWYG (4).

II. Distinguishing the LF Copying Approach from the PF Deletion One

A. A standard argument for LF copying: Missing ambiguities

i. Specific/non-specific ambiguities

It is a standard observation that (50) is ambiguous. Often, this is treated as a scope ambiguity, with a fish taking either wider or narrower scope than wants.

- (50) Mary wants to catch a fish

The two readings can be paraphrased as in (51)a,b.

- (51)a There is a certain fish that Mary want to catch
b Mary hopes her fishing is successful

Now even though (50) is two-ways ambiguous, (52) is not four-ways ambiguous, only two. The interpretation of the ellipsis target must parallel that of the antecedent.

- (52) Mary wants to catch a fish and John does too

Suppose, as extensively argued by May (1977) among many others, that quantificational ambiguities are resolved by LF configuration. In particular, LF movement operations (movement between S-Structure and LF) create two different LF structures for (50), each corresponding to one of the two indicated readings. A fish is ultimately realized as a restricted existential quantifier and its trace as a variable bound by the operator. (PRO is the silent subject 'controlled' by the higher subject Mary.)

- (53)a [A fish] [Mary wants [PRO to catch t]]
 b Mary wants [a fish [PRO to catch t]]

Then, the reasoning goes, the LF movement operation (Quantifier Raising - QR) takes place in the first clause of (52), and the resulting VP structure is copied into the missing VP position in the second clause.

ii. Scope ambiguities with two quantifiers

A similar argument has often been made concerning interactions between two quantifiers as in (54), which, for many speakers, can be paraphrased as either (55)a or b.

- (54) Some linguist admires every philosopher
 (55)a For each philosopher, there is some linguist who admires him or her
 b There is a linguist who has universal admiration for philosophers

Unsurprisingly, (56) has the same ambiguity:

- (56) Some psychologist admires every philosopher

Here again, combining (54) with an elliptical version of (56) gives a sentence that is not four-ways ambiguous:

- (57) Some linguist admires every philosopher and some psychologist does too
 (58) Some linguist₁ [every philosopher₂ [t_1 loves t_2]]
 (59) Every philosopher₂ [some linguist₁ [t_1 loves t_2]]

The same line of reasoning as seen in the discussion of specific/non-specific ambiguities could apply here as well.

iii. Questions about the argument

The result crucially depends on a particular ordering of operations: First, movement in the antecedent, then copying the resulting structure. Does this follow from any deeper principle?

The copying process provides a trace (=variable) in the right position. But the moved item (=operator) is generally outside of the ellipsis site. So how does the elliptical clause get an operator?

Perhaps most importantly, the argument relies on the assumption that the parallelism phenomenon is a special property of ellipsis. But as already observed in Lasnik (1972), it arises with or without ellipsis. (See Tancredi (1992) for extensive discussion.) In the case of specific/non-specific, we observe the same missing ambiguities even without any ellipsis. (60) has the readings in (61), but neither of the crossed readings.

- (60) Mary wants to catch a fish and John wants to catch a fish too
 (61)a There is a certain fish that Mary wants to catch, and there is a certain fish that John wants to catch
 b Mary hopes her fishing is successful, and John hopes his fishing is successful

Just the same is true of the two quantifier phenomenon. In both clauses of (62), the relative scopes of the two quantifiers are the same, even though there is no ellipsis.

- (62) Some linguist admires every philosopher and some psychologist admires every philosopher too

Thus, the scope parallelism phenomenon doesn't tell us anything about ellipsis per se. In fact, as suggested by Chomsky and Lasnik (1993), it becomes a mild argument against an LF copying approach. We need some principle, call it PARR, that gives parallel interpretation in the non-elliptical sentences. The null hypothesis would be that the same principle is at work in the elliptical sentences. But then an additional mechanism ensuring parallelism would be redundant.

B. Arguments for PF deletion

i. Sluicing and preposition stranding Ross (1969), as developed by Merchant (2001)

Some languages (mostly Germanic ones) allow WH-movement of the object of a preposition 'stranding' the preposition:

- (63) Who has Peter talked with *t*
 (64) Vem har Peter talat med *t* **Swedish**
 (65) Hvem har Peter snakket med *t* **Danish**

Other languages (the large majority) do not allow preposition stranding:

- (66) *Pjon milise me **Greek**
 who she.spoke with
 (67) *Kim je govorila Ana sa **Serbo-Croatian**
 who Aux spoken Ana with

Sluicing mirrors these properties, arguing, as noted by Ross and by Merchant, for an analysis involving internal structure in general and movement followed by deletion in particular. C&J

observe that obedience to constraints on movement "would be impressive evidence of the reality of the invisible structure". And that is just what we find with the P-stranding constraint.

- (68) Peter was talking with someone, but I don't know who
- (69) Peter har talat med någon; jag vet inte (med) vem **Swedish**
Peter has talked with someone I know not (with) who
- (70) Peter har snakket med en eller anden, men jeg ved **Danish**
Peter has talked with one or another but I know
ikke (med) hvem
not (with) whom
- (71) I Anna milise me kapjon, alla dhe ksero *(me) pjon **Greek**
the Anna spoke with someone but not I.know with who
- (72) Ana je govorila sa nekim, ali ne znam *(sa) kim **S-C**
Ana Aux spoken with someone but not I.know with who

ii. Sluicing and Case matching

The Case matching phenomenon seen above (and presented as an argument for internal structure of the ellipsis site) also tends to argue for a PF deletion approach (as discussed by Ross and by Merchant). Case can be assigned in the usual way, prior to movement of the wh-phrase. Then the Case will naturally be maintained after movement, and subsequent deletion of the IP. Under the LF copying approach, extra machinery is needed to guarantee Case matching, as the wh-phrase is base-generated in Spec of CP.

iii. VP ellipsis and island violations

Merchant presents data indicating that (some) island violations persist under ellipsis, VP ellipsis this time (another argument of the sort that C&J concede would be an argument for internal structure). (73) illustrates this with a relative clause island, one instance of the Complex NP Constraint of Ross (1967).

- (73) *They want to hire someone who speaks a Balkan language, but I don't know which
they do [_{VP} want to hire someone who speaks *t*] Merchant (2001)

III. Problem: Repair of island violations

As C&J observe, however, there is a problem. In a wide variety of circumstances, island violation effects are not observed under ellipsis (Sluicing in particular):

- (74) I believe that he bit someone, but they don't know who (I believe that he bit)
- (75)a *I believe the claim that he bit someone, but they don't know who I believe the claim that he bit [Complex NP Constraint, noun complement]
b (??)I believe the claim that he bit someone, but they don't know who
- (76)a *Irv and someone were dancing together, but I don't know who Irv and were dancing together [Coordinate Structure Constraint]
b (??)Irv and someone were dancing together, but I don't know who
- (77)a *She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends she kissed a man who bit [Complex NP Constraint, relative clause]
b (??)She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends
- (78)a *That he'll hire someone is possible, but I won't divulge who that he'll hire is possible [Sentential Subject Constraint]
b (??)That he'll hire someone is possible, but I won't divulge who
- [All from Ross (1969)]

The judgments in parentheses are Ross's. Note that those judgments indicate some sensitivity to islands with Sluicing, though lessened from non-elliptical analogues. That would actually constitute an argument **for** movement and deletion, though the improvement still would have to be explained. However, most recent researchers on the topic report that the Sluiced versions are perfect. So the question arises as to why there are no island effects, if there was movement and deletion.

Lasnik (2001) and Merchant (2001), basically following and modernizing a proposal of Chomsky (1972), indicate that islands (or some of them) are PF effects, so PF deletion 'repairs' them by eliminating the offending portion of the structure. C&J challenge this: "To say that the constraint is phonological, and therefore only holds for 'pronounced' structures, is sophistic, since it has yet to be determined that the invisible structure actually exists ..."

IV. Responses to the C&J challenge: Some PF approaches to island constraints and repair by deletion

In this section, I will consider two motivated approaches to islands where island violations are, indeed, phonological effects. The first of these is based on the Multiple Spell Out approach to derivation of Uriagereka (1999). Under this approach, instead of one level of representation (LF) interfacing with semantic interpretation, the syntactic derivation cyclically interfaces with semantics and phonology. Suppose we assume with Uriagereka and with Kayne (1994) that linear order is a PF interface property. Further, assume the first step of Kayne's Linear Correspondence Axiom (LCA) deducing linear order from hierarchy:

- (79) If A c-commands B then A precedes B (defined on terminals).

Then for complex A, SO ‘flattens’ the structure C that contains A and c-commands B, destroying internal phrasal boundaries. This essentially turns C into a terminal and allows it to linearize via (79). This deduces many islands (basically all non-complements).

Now suppose this flattening is optional. If it is not done, extraction will be possible, but, of course, linearization will ultimately fail (as the cycle demands that there will be no later opportunity to flatten). But it won't fail if the problematic material is rendered invisible to phonetics. Thus, repair of (at least these) islands by deletion.

The next approach is based on work of Fox and Pesetsky (2003). They propose that at each spell-out domain, linear ordering statements are added to an ever growing Ordering Table. This enforces successive cyclic movement as follows:

- (80)a When movement does not proceed from each successive phase edge (for example, if this is prevented by an island), contradictory ordering statements ultimately appear in the Table.
- b When deletion takes place, it can have a salvation effect by eliminating all ordering statements involving deleted material, including the contradictory statements that can result from moving too far in one jump. Island violation repair is one such situation.

So what of the failure of VP deletion to repair island violations, as in (73)? Lasnik (2001b) points out that the generalization is actually stranger even than that, at least at first blush. Apparently parallel 'failure of repair' obtains even when there was no violation in the first place. For example, extraction out of an embedded clause is typically fine, and Sluicing is just as good, but Verb Phrase Ellipsis is bad:

- (81) They said they heard about a Balkan language, but I don't know which Balkan language they said they heard about
- (82) They said they heard about a Balkan language, but I don't know which Balkan language
- (83) *They said they heard about a Balkan language, but I don't know which Balkan language they did

Similarly for extraction out of an object NP:

- (84) They heard a lecture about a Balkan language, but I don't know which Balkan language they heard a lecture about
- (85) They heard a lecture about a Balkan language, but I don't know which Balkan language
- (86) *They heard a lecture about a Balkan language, but I don't know which Balkan language they did

Fox and Lasnik (2003) offer an account of these seemingly bizarre facts. Consider first, the nature of Sluicing:

- (87) Fred said that Mary talked to a certain girl, but I don't know which girl <~~Fred said that Mary talked to t~~>

Now suppose, following Chung et al. (1995), that the indefinite in the antecedent of Sluicing must be bound by existential closure in a way that is parallel to the *wh*-dependency in the sluiced clause. And suppose, contra Merchant (2001), and certainly contra C&J, that formal parallelism is required for ellipsis. This is satisfied since the variables in the antecedent and the elided clause are bound by parallel operators and from parallel positions. Now notice that in the structure shown, there are no intermediate traces in the elided portion (in angle brackets), indicating that there were no intermediate landing sites in the movement. If there had been successive movement (leaving intermediate traces), under plausible assumptions the relevant portions of the antecedent and the ellipsis site would not be parallel, and this would prevent ellipsis. This would seem to be problematic under the assumption that successive cyclic movement is required by considerations of locality. But, as discussed earlier, considerations of locality are nullified under deletion (island repair).

But why is there no 'repair' with VPE? VPE involves deletion of a smaller constituent than the clause that is elided in sluicing (VP vs. TP):

- (88) which girl [_{TP} he T [_{AspP} did <_{VP} ~~say that I talked to g(girl)~~>]]
 (89) *Fred said that Mary talked to a certain girl, but I don't know which girl he did

The unacceptability of VPE follows if we assume that one of the two remaining maximal projections, perhaps AspP or TP, is an 'island' that must be circumvented by adjunction or repaired by deletion. [This roughly follows the claim of Chomsky (1986) that all XPs are potential barriers.] Since the island is not deleted, the escape hatch is required, and a violation of Parallelism is unavoidable. Under the Fox and Pesetsky proposal, at least some contradictory ordering statements will appear in the Table even after VP ellipsis.

Since this account of the contrast between VPE and sluicing relies crucially on the fact that there is movement in the elided constituent but not in the antecedent constituent, a prediction is that if the antecedent clause is replaced with a clause that involves movement, both VPE and sluicing would be possible.

- (90)a I know which book John said that Mary read, but **you** don't know which one
 b ?I know which book John said that Mary read, but **you** don't know which one he did.

Compare:

- (91)a I know that John said that Mary read a certain book, but I don't know which one.
 b *I know that John said that Mary read a certain book, but I don't know which one he did.

Judgments seem to go in the predicted direction. To the extent that this is so, it reinforces the idea that parallelism is implicated in at least certain instances of ellipsis, hence provides another argument for internal structure in the ellipsis site.

V. A new question: P-stranding

As noted earlier, P-stranding violations evidently cannot be repaired by ellipsis. This

is mysterious, in fact paradoxical, if the P-stranding constraint is an 'island constraint'. Here I offer the following speculation: Suppose that the P-stranding constraint is not representational but derivational, perhaps the A-over-A constraint. In fact, Chomsky (1973) proposed this in anticipation of Postal's argument against successive cyclic wh-movement (Postal (1972)). Postal pointed out that since P-stranding is optional in English, successive cyclic movement ought to have the capability of stranding a preposition in an intermediate landing site. But this is not possible:

- (92)a To whom do you think (that) John talked
- b Who do you think (that) John talked to
- c *Who do you think to (that) John talked

To allow (92)a and (92)b, Chomsky proposes that the wh-feature on *who(m)* can 'percolate' to the PP *to whom*.

(92)c is still correctly excluded, since the initial move of the PP means the feature has percolated, so the second step is impossible, by the A-over-A condition.

This suggests that the difference (or one of the differences) between languages that do and don't allow P-stranding in initial position is whether the wh-feature **can** or **must** percolate from DP to immediately dominating PP. In the latter type of language, even the first P-stranding step would violate the A-over-A. And if we continue to take that as a constraint on the operation of the transformation, P simply couldn't be stranded, so repair would never be a possibility.

VI. Tentative conclusion

At least some ellipsis phenomena involve an ellipsis site with silent internal syntactic structure. And for at least some of these, PF deletion provides the most straightforward account.

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