VP Ellipsis and VP anaphora

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Outline

1- Post auxiliary ellipsis (PAE)
2- Corpus study (WSJ)
3- Choice of verbal anaphors (experiment)
4. Analyses
5. Recycling ? (experiment)
Some references

VP ellipsis

Syntax and semantics:

Psycholinguistics:

Corpus studies
1. Post Auxiliary Ellipsis (PAE)

based on auxiliaries (*may, can, must, will, shall; be, have, to*) and *do*

VP Ellipsis is a misnomer (Sag 1976).

(1) We don't want to cancel the parade, but we could [VP cancel the parade].

(2) You think I'm dumb, but I'm not [AP dumb]

(3) He said there would be results quite soon, and indeed there were [NP results] [AdvP quite soon].

(4) I couldn't reach him though I tried [VP to reach him] several times. [Null complement anaphora, not PAE]
Examples of PAE

(5) a. Though I haven’t yet had time to Ø, I will be seeing John soon. [Cataphoric VPE].

b. A. —Kim is working today.
   B. —Sandy is Ø too.

c. A. - Are you Brazilian?
   B. - I am Ø.

[Note that *Brazilian* is not a VP]
Specificity of PAE?

≠ gapping

- Can occur in subordination:
  (6)a. Paul came, I don’t know if Mary will.
  b. *Paul went to Rome, I don’t know if Mary to Paris. (gapping)

- Can be cataphoric:
  (7)a. If you can, please come now.
  b. *Paul to Rome and Mary went to Paris.

Like sluicing?

(8)a. Paul left. I don’t know why. [he left]
  b. I don’t know why, but Paul left. (reverse sluicing)
Specificity of PAE?

Merchant 2012 distinguishes VP ellipsis (« small ellipsis ») and « large ellipsis » (gapping and sluicing)

Tense mismatch
<wsj_0114> His wife also works for the paper, as did his father.
* Paul went to the movies and Mary tomorrow to the pool. (gapping)

Voice mismatch (Hardt 1993, Kehler 2002)
The system can be used by anyone who wants to use it.
* The poem was read by Mary, and Paul read the novel. (gapping)

Polarity mismatch (Sag 1976, Merchant 2013)
  John didn’t see anyone, but Mary did see someone.
  John saw someone, but Mary didn’t see anyone.
Pali had some problems there, but Mary never. (gapping?)
2. Analyses of PAE

**Syntactic analyses**: some form of deletion or copying under syntactic identity

– Hankamer and Sag (1976): Deletion under Surface Structure identity

– Sag (1976): Deletion under LF identity

– Williams (1977): Copying LF structure into ellipsis site

– Merchant (2013): Ellipsis is non pronunciation of structure under syntactic identity
Analyses of PAE

**Semantic analyses:** PAE is a proform requiring recovery of an anaphoric or exophoric antecedent

– The auxiliary can be interpreted as a pro-VP or it can be assumed that there is a null pro-VP as complement of the auxiliary

2.1. Arguments for a syntactic analysis?

Auxiliary reduction blocked before an ellipsis site. But in fact this turns out to be a more complex restriction.

(10) a. Paul Anderson’s fat, and I am/*I’m Ø too.

b. Jane is a more brilliant doctor than Mary is/*’s a [degADV Ø ] promising lawyer (Selkirk 1984: 375)
Binding effects

(11) a. *She$_i$ talked to Sue$_i$. (Dalrymple 2004:34, (6))
b. *I talked to Sue$_i$, and she$_i$ did too. (Dalrymple 2004:34)
c. *I talked to Sue$_i$, and she$_i$ talked to Sue$_i$. (Dalrymple 2004:34)

[Violation of principle C in unpronounced structure]

but

(12) a. John voted for Sue$_i$ because she$_i$ told him to *[vote for Sue$_i$] (Dalrymple 2004:37)
b. I didn’t vote for Sue$_i$, even though she$_i$ asked me to *[vote for Sue$_i$] (Dalrymple 2004:37)
Binding effects

(13)a. Al$_i$ blamed himself$_i$, and George did too. [blamed George /*Al]
b. Al$_i$ blamed himself$_i$, and George$_j$ did blame himself$_j$
   But

(14)a. Al$_i$ defended himself$_i$ because Bill wouldn’t.
   [defend Al] (adapted from Dalrymple 1991, ex. 75a)
b. # Al$_i$ defended himself$_i$ because Bill wouldn’t defend himself$_i$. 
Locality effects?

Island effects due to unpronounced structure?

(15) a. *Abby knows five people who have dogs, but cats_i, she doesn’t know five people [who have t_i].

(Merchant’s (21c)) Wh- island violation

b. *Abby knows five people who have dogs, but cats, she doesn’t [know five people who have] (Merchant’s (21c))

[putative effect of island violation in unpronounced structure]

c. ??Abby has five dogs, but cats she doesn’t.

[unclear that c. is better than b., though there is no island violation here]
Locality effects?

but

(16) a. Abby knows someone who owns a German shepherd, but a dalmation she doesn’t.
b. *Abby knows someone who owns a German shepherd, but a dalmation she doesn’t know someone [who owns t].

=> Acceptability studies?
3.2 Problems for a deletion analysis

(17) a. Anne wanted to dance with Mike, and he wanted to dance with her, but in the end they didn’t because both were to shy. (Adapted from Webber 1979) [=didn’t dance together]. (Split antecedent)

b. Mubarak’s survival is impossible to predict and, even if he does [survive], his plan to make his son his heir apparent is now in serious jeopardy. (COCA) (Nominal antecedent)

c. Actually I have implemented it [=a computer system] with a manager, but it doesn’t have to be [implemented with a manager]. (Kehler 2000): 549) (Voice mismatch)
Exophoric uses?

(18)a [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]
Sag: #It’s not clear that you’ll be able to. (H&S:3)
b. [Same context]
Sag: It’s not clear that you’ll be able to do it. (H&S:4)
c. Hankamer: I’m going to stuff this ball through this hoop.
Sag: It’s not clear that you’ll be able to. (H&S:5)
(19) a. [Sag produces a cleaver and prepares to hack off his left hand]
Hankamer: #Don’t be alarmed, ladies and gentlemen, we’ve rehearsed this act several times, and he never actually does.
b. [Same context] Hankamer: . . He never actually does it. (H&S:6)
Exophoric uses

(20) a. [Child about to touch hot stove.] Don’t!
b. The aisles at the Lakewood Wal-Mart are surprisingly packed at 11 pm. “Can we? Can we?” Vanessa tugs at her mother, pointing to a rack of “Lady and the Tramp” DVDs. Diaz shrugs. OK. (COCA)

Most of these types of problems were discovered thanks attention to naturally occurring data (either in ordinary speech and in reading, or, later, using corpora).
3. A Corpus study

Bos & Spenader 2011: Wall Street Journal

PTB annotation (260) + semi-automatic annotation
⇒ 487 examples including tag questions, and pseudogapping

PTB annotation:
(1) <wsj_1996> How soon Wang will [vp stage a comeback], or if it will stage a comeback at all, are still matters of debate.

Additional search:
(2) <wsj_1391> China might stave off a crisis if it [vp acts as forcefully] as it did to arrest the 1985 decline, when Beijing slammed the brakes on foreign-exchange spending and devalued the currency.

Annotated for trigger (auxiliary), syntactic pattern and antecedent
Corpus study

Cataphoric

As she has done in the past, she stated her support for Mr. Lawson but insisted on keeping on an adviser who opposed and disparaged his policies. <wsj_0883>

Predicative ellipsis

<wsj_1146> The farmers stayed [ap angry]. They still are angry. <wsj_0561> The ball he hit wasn’t [np a strike]. If it had been a strike, he mighta hit it out.
<wsj_0515> For just as the Arabs were on the brink of global power and fame in the 1960s, the farmers of Sidhpur are [pp on the brink of global power and fame].

Antecedent contained ellipsis

<wsj_0433> Do you think the British [tv know] something that we don’t know? = ‘something that the British know and we don’t know.’”
Corpus study

Comparative

<wsj_0445> Moreover, Japanese offices tend to [vp use computers less efficiently] than American offices do use computers efficiently.
<wsj_0456> He did not [vp go as far] as he could have gone far in tax reductions; indeed he combined them with increases in indirect taxes.

Pseudogapping

<wsj_2369> Don’t say the TV sitcom, because that happens to be a genre that, in its desperate need to attract everybody and offend nobody, [tv resembles] politics more than it does resemble comedy.

Tag questions

<wsj_1618> But you [vp knew that], didn’t you know that?
Corpus study (aux trigger)

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Token frequency</th>
<th>VPE frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>be</td>
<td>30,124</td>
<td>108</td>
<td>0.36</td>
</tr>
<tr>
<td>to</td>
<td>29,868</td>
<td>29</td>
<td>0.10</td>
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<tr>
<td>have</td>
<td>11,249</td>
<td>44</td>
<td>0.39</td>
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<tr>
<td>will</td>
<td>4,385</td>
<td>26</td>
<td>0.59</td>
</tr>
<tr>
<td>do</td>
<td>3,103</td>
<td>213</td>
<td>6.86</td>
</tr>
<tr>
<td>would</td>
<td>2,954</td>
<td>14</td>
<td>0.47</td>
</tr>
<tr>
<td>could</td>
<td>1,465</td>
<td>11</td>
<td>0.75</td>
</tr>
<tr>
<td>can</td>
<td>1,171</td>
<td>29</td>
<td>2.48</td>
</tr>
<tr>
<td>may</td>
<td>1,049</td>
<td>1</td>
<td>0.10</td>
</tr>
<tr>
<td>should</td>
<td>580</td>
<td>7</td>
<td>1.21</td>
</tr>
<tr>
<td>might</td>
<td>464</td>
<td>4</td>
<td>0.86</td>
</tr>
<tr>
<td>must</td>
<td>327</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>shall</td>
<td>32</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Corpus study

Only 5 examples with *too*

9 examples with possesive

<wsj_0445> IBM1, though long a leader in the Japanese mainframe business, didn’t [vp introduce its1 first PC in Japan] until 5 years after NEC2 did introduce its2 first PC in Japan, and that wasn’t compatible even with the U.S. IBM standard.

=> All sloppy reading
Corpus study

Comparative: 214 (44%)
Other subordination (when, if, before…): 44 (9%)
Coordination (and, or, but): 85 (17%)
Juxtaposition: 26 (5%)

In 1980, 18% of federal prosecutions concluded at trial; in 1987, only 9% did. <wsj_0617>

15 subordinate+ main (4 cataphoric)
72 non verbal antecedents (with BE)
No voice mismatch, no split antecedents, no exophoric use
Comparison with gapping

Bilbiie 2013: WSJ (class 2)
309 examples annotated but only 97 of true gapping
Coordination: 85 (88%)
Juxtaposition: 12 (12%)
Comparatives not annotated?
So why did advertising pages plunge by almost 10% and ad revenue by 7.2% in the first half? (wsj-26366)
The second ship is scheduled to be delivered in fall 1990 and the third in fall 1991. (wsj-47074)
Spain is down 10% and suspended, Sweden’s down 8%, Norway 11%. (wsj-16842)
4. Verbal anaphors in English

based on main verb *do*
– *do it, do this, do that* (= *do it/this/that*)
– *do so*

(1) A— Do you like to go to the movies?  
B— Sure, I *do it* all the time.

(2) A does something unpleasant.  
   B: Don't *do that* again. (exophoric use)

(3) Kim voted for Sandy. She *did so* because there was no other reasonable choice.
PAE and VPA

Verb phrase anaphora: deep anaphora? 
Post-auxiliary ellipsis: surface anaphora?

4.1 Miller 2011: Corpus study using COCA:
4.2. Miller & Hemforth (2014) Discourse conditions on the choice of verbal anaphors
Experiment PAE/ do it : acceptability judgement with/without adjunct
Miller (2011) the choice of verbal anaphors

– Corpus study:
All examples cited here are from the COCA unless otherwise stated.
See Miller’s slides
Experiment *do/do it*
comparing acceptability of PAE and *do it* as answers to polar questions, with and without adjuncts.

A typical item in its four conditions
A—Did Peter dance with you at the party?
-adj, do: B—Yes, he did.
-adj, do it: B—Yes, he did it.
+adj, do: B—Yes, he did to make me happy.
+adj, do it: B—Yes, he did it to make me happy.
Experiment 1 stimulus

A: Did Peter dance with you at the party?

B: Yes, he did.

_How natural is B’s response?_

(not at all natural)  1  2  3  4  5  6  7  (perfectly natural)
Design and methods

20 items distributed across 4 lists following a Latin Square design, randomly mixed with 60 distractors.

1. A.—Did Kim go home?
   a B.—Yes, she did because she was tired.
   b B.—Yes, she did it because she was tired.
   c B.—Yes, she did.
   d B.—Yes, she did it.

2. A.—Did Emma eat the sandwich?
   a B.—Yes, she did because she was very hungry.
   b B.—Yes, she did it because she was very hungry.
   c B.—Yes, she did.
   d B.—Yes, she did it.
Materials

3. A.—Did Jim manage to solve the problem?
   a B.—Yes, he did on Tuesday.
   b B.—Yes, he did it on Tuesday.
   c B.—Yes, he did.
   d B.—Yes, he did it.

4. A.—Did Ann plant tulips in her garden?
   – a B.—Yes, she did with great care.
   – b B.—Yes, she did it with great care.
   – c B.—Yes, she did.
   – d B.—Yes, she did it.
Design and methods

80 participants judged acceptability (explained in terms of naturalness of the answer in the context of the question) on a 7 point scale.

7 self-reported non-native speakers were excluded from the analyses as well as two further participants who systematically judged all items as perfectly natural without making any distinctions.

We furthermore excluded judgments with reaction times lower than 500 ms. This affected 1.3% of the observations of the remaining 71 participants.
Results

– Highly significant interaction (Chisquare(1)=34.919, p< .001): the absence of an adjunct significantly increases the acceptability of do \( (t=11.49, p< .001) \) and significantly reduces the acceptability of do it \( (t=-14.4, p< .001) \).

– Moreover, do is generally more acceptable than do it: 6.61 vs. 5.83, Chisquare(1)=5.2324, p.< .03).

– No significant main effect for the presence/absence of an adjunct (p> .10).
Results
5. The recycling hypothesis

- Frazier and her colleagues (e.g., Arregui et al. 2006; Grant et al. 2012; Frazier 2013) propose that strict syntactic identity is needed and that anything else is ungrammatical.

- They also propose that ungrammatical sentences can be repaired (‘recycled’) and thus be more or less acceptable, depending on the complexity of the repair.

- This position is difficult to defend when the acceptability of some of the putatively repaired structures is indistinguishable from that of grammatical structures.
An experiment

expect declining rates of acceptability

(15) a. Almost nobody approached the lion, but the trainer did. (Available VP)
b. Approaching the lion was nearly impossible, but the trainer did. (Embedded VP)
c. The lion was nearly impossible to approach, but the trainer did. (VP with trace)
d. The lion was nearly unapproachable, but the trainer did. (Negative adjective)
Two provisos

They didn’t compare with VPA

16) a. Almost nobody approached the lion, but the trainer did it. (Available VP)
b. Approaching the lion was nearly impossible, but the trainer did it. (Embedded VP)
c. The lion was nearly impossible to approach, but the trainer did it. (VP with trace)
d. The lion was nearly unapproachable, but the trainer did it. (Negative adjective)

They didn’t control for discourse conditions:
a and b are ok with subject-focus PAE; c and d violate discourse conditions of aux-focus and subj-focus PAE
Recycling: a syntactic account of VP ellipsis

Tanenhaus & Carlson (1990) VP ellipsis is more easily judged to make sense when the antecedent of the ellipsis is syntactically parallel to the form of the ellipsis (2a > 2b):

(2)a. Someone had to take out the bargage. But Bill refused to.
b. The garbage had to be taken out. But Bill refused to.

VP ellipsis≠VP anaphora

(3)a * This information was released but Gorbatchov didn’t.
b. This information was released but Gorbatchov didn’t do it.
The recycling hypothesis

An antecedent verb phrase is copied and, if it is of the wrong shape, it is then altered.
The recycling or fixing up of the copied structure should be easy if:
– it involves only a few steps,
– those steps are defined by the grammar,
The copied structure is related to the target structure by systematic operations available for systematic paraphrase relations,
– a presupposition trigger implies that a matching antecedent may be available in preceding context.

*John left and Bill did [leave] too.* (tense repair)
*John didn’t see anyone, but Paul did [see someone].* (polarity repair)
Acceptable ungrammaticality ?

Staum and Sag (2007):
(25)a. John reminded Mary that soon his brother would be ready to leave.
b. John reminded Mary that soon that his brother would be ready to leave. (Short intervener) (rejected)
c. John reminded Mary that after he was finished with his meeting his brother would be ready to leave.
d. John reminded Mary that after he was finished with his meeting that his brother would be ready to leave. (Long intervener) (prefered to c)
Grammatical illusions ? (Frazier 2016)
Recycling

- The grammatical resolution of VP ellipsis requires the presence of a parallel antecedent,
- But in the absence of such an antecedent, the processor may recycle materials at hand and create a suitable syntactic structure
⇒ A performance repair strategy for a structure that is, strictly speaking, ungrammatical
⇒ 5 experiments
Experiment 1

Antecedents with VP or AP (d)
VP: matrix (a), embedded (b) or with trace (c)
(9a) None of the astronomers saw the comet, but John did.
(9b) Seeing the comet was nearly impossible, but John did.
(9c) The comet was nearly impossible to see, but John did.
(9d) The comet was nearly unseeable, but John did.
Recycling assumed to take place in (c) (vp= see the comet) and in (d) (no vp)
Material:
4 versions of 16 sentences + 122 other sentences and two-sentence discourses of a wide variety of constructions, including 32 sentences that were unacceptable for a variety of reasons (gender or number disagreement, missing or extra arguments, semantic anomaly, etc.). 48 UMass undergrads
## Experiment 1

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage acceptable</th>
<th>Reaction time</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Available VP</td>
<td>82.8</td>
<td>2146</td>
</tr>
<tr>
<td>b. Embedded VP</td>
<td>66.1</td>
<td>2230</td>
</tr>
<tr>
<td>c. VP with trace</td>
<td>43.9</td>
<td>2399</td>
</tr>
<tr>
<td>d. Negative Adj</td>
<td>17.1</td>
<td>2298</td>
</tr>
</tbody>
</table>

95% confidence interval of the difference between any two percentages is 9.6%, and between two RTs is 292 ms.

Forced choice: Right hand trigger for acceptable, left hand trigger for unacceptable.
Experiment 2
Computerized questionnaire with two different sentences appeared in each of the eight conditions + 100 other sentences of a variety of constructions.
Each of the 16 experimental items, and 52 of the remaining items, presented together with a 5-point acceptability judgment scale, Each of the remaining 48 sentences presented by itself, and followed by a two-choice interpretation question.
48 UMass undergrads (read and rate, or read and understand)
Results: clear acceptability differences among the four versions of the ellipsis sentences, but not among the four nonelliptical sentences.
comprehending the ellipsis more difficult when no appropriate antecedent easily available;
but while the apparent differences among the four elliptical conditions can be trusted, those among the four nonelliptical conditions cannot
Fig. 1. Mean ratings Experiment 2. Error bars indicate 95%
Experiment 3

Experimental items
(13a) The singing of the aria was slow. (nominal gerund: no VP)
(13b) Singing the aria was difficult. (verbal gerund)
(13c) Maria’s singing of the aria was slow. (nominal gerund: no VP)
(13d) Maria’s singing the aria was difficult. (verbal gerund)

(14) a) Singing the arias tomorrow night will be difficult / but Maria will. (Verbal, -mod)
(14b) Singing the arias slowly tomorrow night will be difficult / but Maria will. (Verbal, mod)
(14c) Tomorrow night’s singing of the arias will be difficult / but Maria will. (Nominal, -mod)
(14d) Tomorrow night’s slow singing of the arias will be difficult / but Maria will. (Nominal, +mod).
Experiment 3

• 16 items (2 with a verbal gerund and 2 with a nominal gerund, 2 with a modifier and two without) + 120 other items of varying form (including 8 practice items), of which 36 were clearly unacceptable.

84 (-24 ) UMass grad students

• Result: elliptical sentences with a verbal gerund as the presumed antecedent of a verbal ellipsis are more acceptable than sentences with a nominal gerund.
### Experiment 3

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage acceptable</th>
<th>Reaction time</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Verbal Gerund, -modifier</td>
<td>56.2</td>
<td>1891</td>
</tr>
<tr>
<td>b. Verbal Gerund, +modifier</td>
<td>59.7</td>
<td>1801</td>
</tr>
<tr>
<td>c. Nominal Gerund, -modifier</td>
<td>36.3</td>
<td>2014</td>
</tr>
<tr>
<td>d. Nominal Gerund, +modifier</td>
<td>33.7</td>
<td>1875</td>
</tr>
</tbody>
</table>

95% confidence interval of the difference between two percentages is 9.4%, and between two RTs is 198 ms. No statistical evidence that the ease of comprehending a verbal gerund was increased when it was accompanied by a verbal modifier, or decreased when a nominal gerund was accompanied by a nominal modifier.
Experiment 4

Acceptability rating 1-5
Same items : verbal vs nominal gerund, modified vs not modified + final elliptical clause vs no such clause.
Results:
- sentences without ellipses were preferred to sentences with ellipses,
- clear effect of type of gerund when an elliptical clause was present, but not when the elliptical clause was absent.
Experiment 5

- The grammar of ellipsis requires a syntactically matching antecedent for the elided constituent.
- Ellipsis is ungrammatical when no syntactically matching antecedent is available, despite the actual occurrence of such examples in naturally-occurring speech (acceptable ungrammaticality)
  - Speech errors: syntactic blends (Fay 1982, Cohen 1987) “A blend occurs when a speaker has in mind simultaneously two ways of expressing the same message”

=> speakers will be most likely to produce ungrammatical ellipsis in cases where a systematic paraphrase is available for the antecedent clause, e.g., such as the relation between active and passive clauses in English.
Active/passive: listeners are more likely to mis-recall a passive as an active than to mis-recall an active as a passive (Mehler, 1963).
Experiment 5

written acceptability judgment
two hypotheses:
- mismatching antecedents for a later ellipsis should be better when the antecedent is the more complex or more marked member of a paraphrase pair than when it is the less marked member. (passive antecedent + active elided VP should be more acceptable than active antecedent + passive elided VP).
- some words act as presupposition triggers, implying that certain information is already present in the discourse. If a presupposition trigger (already, previously, too), is included in a mismatching antecedent example, it may improve the status of the example by suggesting that the speaker had intended to provide an appropriate antecedent for the elided constituent.
Experiment 5

12 examples like (16) + 12 examples like (17):

(16) a. The dessert was praised by the customer after the critic did already.
b. The dessert was praised by the customer and the critic did.
c. The customer praised the dessert after the appetizer was already.
d. The customer praised the dessert and the appetizer was.

(17) a. The student was praised by the old schoolmaster, and the advisor did too.
b. The student was praised by the old schoolmaster, and the advisor did.
c. The advisor praised the student, and the old schoolmaster was too.
d. The advisor praised the student, and the old school-master was.
Experiment 5

96 test sentences: Acceptability rating (1-5)
Written questionnaire: 24 test sentences + 40 other sentences followed by a 5-point acceptability rating scale + 27 other followed by a two-choice response offering two alternative interpretations of the sentence.
Results:
- Sentences with an active–passive order of clauses were rated as less acceptable than sentences with a passive–active order
- The presence of a presupposition trigger (after plus a temporal phrase or too) led to higher ratings than its absence
- Interaction between the 2 factors
The recycling hypothesis

The recycling hypothesis: an approach to systematic asymmetries in mismatching cases that explains why a marked form of the antecedent with an unmarked form of the elided constituent is more acceptable than the other way around.

A semantic account would need to find the same level of relevant fine-grained distinctions in purely semantic representations. Since all conditions have event-denoting verb roots, why would these event properties be made more salient or available in an active sentence than a passive, and by an inflected VP than by a gerund, by a gerund than by a nominalization, etc.

Possible answer (P. Miller) =

The materials didn’t respect the discourse conditions for PAE
The antecedent must denote an open proposition (subject focus) or an salient \( p \lor \neg(p) \) alternative (aux focus)