

# Adjunct Stranding, Late Merger, and the Timing of Syntactic Operations

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## Introduction

Lebeaux (1991): syntactic structures need not be built in a completely cyclic, bottom-up fashion. Some elements—in particular, **adjuncts**—can be inserted **late**.

- (1) a. \*He<sub>i</sub> resented an inspection of John<sub>i</sub>'s office.  
b. \*He<sub>i</sub> resented an inspection near John<sub>i</sub>'s office.

A-movement seems to bleed Condition C if the offending R-expression is inside an adjunct

- (2) a. ???\*Which inspection of John<sub>i</sub>'s office did he<sub>i</sub> resent?  
b. Which inspection near John<sub>i</sub>'s office did he<sub>i</sub> resent?

- (3) [which inspection near John<sub>i</sub>'s office] did he<sub>i</sub> resent [which inspection]?  
[adjunct merged late]

(Also: Nissenbaum 1998, Sauerland 1998, Fox & Nissenbaum 1999/2006, Stepanov 2000, 2001, Fox 2002, Bošković 2004, a.o.)

Stepanov (2001): late merger of adjuncts is not just possible, but *obligatory*.

I argue that a different phenomenon—**adjunct stranding** in English—provides additional evidence for obligatory late adjunction, and suggests that it is bounded by **phases**:

### (4) Phase-Based Obligatory Late Adjunction

For H a phase head and XP its associated spellout domain (= complement), adjunction within the HP phase occurs *immediately* before spellout of XP.

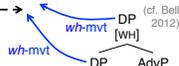
## The puzzle: adverb stranding and its restrictions

The adverb *exactly* (also *precisely*) can immediately follow a moved *wh*-phrase, or be "stranded" by it:

(Urban 1999, McCloskey 2000, Stroik 2009)

- (5) a. *Who exactly* did he blame? ~ *Who* did he blame *exactly*?  
b. *What exactly* did she devour? ~ *What* did she devour *exactly*?

I take this alternation to involve adjunction of *exactly* to the *wh*-phrase, followed by movement of either the whole adjunction structure or its lower segment alone:



The puzzle: when a VP-internal *wh-exactly* constituent is followed by two other low vP-internal constituents, adverb stranding is impossible.

- (6) a. Muriel put *WHAT exactly* on the table with great care?! *echo question*  
b. Who put *what exactly* on the table with great care? *multiple question*  
c. \*What did Muriel put *exactly* on the table with great care?  
(7) a. Mrs. Winston sent *WHO exactly* to the principal without a second thought?! *echo question*  
b. *Who* sent *who exactly* to the principal without a second thought? *multiple question*  
c. \*Who did Mrs. Winston send *exactly* to the principal without a second thought?

Although these data underdetermine the descriptive generalization, I suggest that the correct generalization is:

- (8) An adverb cannot be stranded in an internal argument position inside VP.

Why should this be?

## Excursus: clause-final stranded adverbs are high

If (8) is correct, then in cases like *Who did he blame exactly?*, *exactly* must not be inside the direct object position in surface syntax, but higher. Support for this conclusion:

- (9) I know what she'll SELL.  
a. (?)\*But DONATE, what will she exactly?  
b. \*But DONATE exactly, what will she?

A stranded *exactly* cannot be carried along in vP-preposing.

- (10) What should we read TODAY to impress our ENGLISH teacher?  
And what ~~should we read~~ TOMORROW exactly(, to impress our GERMAN teacher)?

A stranded *exactly* can survive slicing.

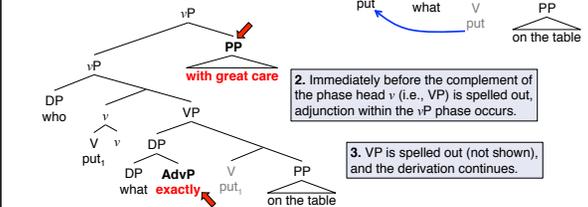
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## Analysis

Let us see how **Phase-Based Obligatory Late Adjunction** (4) can help us understand why a *wh-exactly* constituent can be generated in an internal argument position, but *exactly* cannot be stranded there.

**Case 1: The adjunction host does not move**  
(echo questions, multiple *wh*-questions)

- (11) Who put *what exactly* on the table with great care?



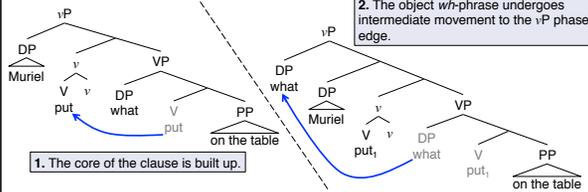
1. The core of the clause is built up.

2. Immediately before the complement of the phase head v (i.e., VP) is spelled out, adjunction within the vP phase occurs.

3. VP is spelled out (not shown), and the derivation continues.

**Case 2: The would-be adjunction host does move**

- (12) \*What did Muriel put *exactly* on the table with great care?



2. The object *wh*-phrase undergoes intermediate movement to the vP phase edge.

1. The core of the clause is built up.

Suppose (counterfactually) that we wanted to **both** move *what* to the vP phase edge (2) and adjoin *exactly* to *what* in the latter's base position.

**Hypothetical path 1: Adjoin *exactly* to *what* in the latter's base position.**  
Then **move *what*** to the vP phase edge, stranding *exactly*.

→ Not possible, because adjunction within the vP phase **immediately** precedes spellout of VP. *What exactly* would be trapped in VP and spelled out in situ.

**Hypothetical path 2: Move *what* to the vP phase edge.**  
Then **adjoin *exactly* to the lower copy of *what*.**

→ This will be (desirably) ruled out if adjunction must target the highest existing copy of an element.

That in turn follows from (a particular interpretation of) Stepanov's (2001) Least Tampering proposals (cf. Chomsky 2000): adjoining to the **higher** copy creates fewer new c-command relations inside an already built structure, so it is preferred.

If this is so, we derive the following result, as desired:

- (13) If an element is going to move out of VP, it can't host an adjunct in its base position.

## Predictions: adjunct stranding at phase edges

The putative order of operations (partial):

- (14) a. Adjunction within the vP phase  
b. [Then, immediately] Spellout of the complement of v (= VP)

- (15) **Prediction: Adverb stranding at the vP phase edge**

It should be possible to (internally or externally) merge a *wh*-phrase at the vP edge, adjoin an adverb to it, and (in the next phase) move the adjunction host (further), stranding the adverb at the vP edge.

Things look good for this prediction, though the relevant examples have an informal ring to them:

- (16) a. \*What was he *exactly* doing there? [= informal]  
b. \*What did she *exactly* send? [N.B. adjunct stranding in a θ-position, contra Bošković 2004]  
c. \*What did he *exactly* mean by this? [Internet; many examples attested online]

Problem: an adverb cannot be stranded at the vP edge when passive or progressive *be* is present.

- (17) a. \*What had she *been exactly* sent?  
b. \*What had she *been exactly* sending?  
c. \*What had she *been being exactly* sent?

But suppose these auxiliaries are **part** of the clause-internal phase when present (cf. Harwood 2015). Then, a stranded adverb should be able to immediately **precede** these auxiliaries—and it can:

- (18) a. \*What had she *exactly* been sent? [= informal]  
b. \*What had she *exactly* been sending?  
c. \*What had she *exactly* been being sent?

By parity of reasoning (cf. (14)), the analysis predicts that adverbs should be strandelable at the CP phase edge, but not in non-phase-edge positions inside CP. This is apparently so: (cf. McCloskey 2000)

- (19) a. \*What do you believe *exactly* (that) everyone said (that) she devoured? [adverb stranding at the CP phase edge]  
b. \*What do you believe (that) everyone said *exactly* (that) she devoured?  
(20) \*What do you believe that (\**exactly*) everyone said that (\**exactly*) she devoured? [no adverb stranding in a non-phase-edge position within CP]

## Predictions about other types of adjuncts: relative clauses

Nothing about the analysis is specific to *exactly/precisely*-type adverbs. All **adjuncts to *wh*-phrases** should behave similarly. Consider relative clauses (RCs).

A [*wh* + RC] constituent inside VP can be followed by two other low vP-internal constituents. Here too, the adjunct cannot be stranded in situ, as predicted:

- (21) a. Muriel put *WHAT that was slimy on the table* with great care?! *echo question*  
b. Who put *what that was slimy on the table* with great care? *multiple question*  
c. ?\*What did Muriel put *that was slimy* on the table with great care?

**RC stranding:** relatively acceptable at the **CP phase edge**; unacceptable in a **non-phase-edge position** within CP (as predicted).

- (22) a. \*What *that's REALLY VALUABLE* did Mary say that Bill should keep locked up?  
b. ?\*What did Mary say *that's REALLY VALUABLE* that Bill should keep locked up?  
c. ?\*What did Mary say that *that's REALLY VALUABLE* Bill should keep locked up?

Also as predicted: RC stranding is relatively acceptable at the **edge of the clause-internal phase** (in our semi-Harwoodian sense), but unacceptable in a **non-phase-edge position** within that phase.

- (23) a. ?\*What had John *that was REALLY DIRTY* washed for two hours by then?  
b. ?\*What had John *that was REALLY DIRTY* been washing for two hours by then?  
c. ?\*What had already *that was REALLY DIRTY* been washed for two hours by then?  
d. ?\*What had already *that was REALLY DIRTY* been being washed for two hours by then?

- (24) a. \*What had John *been that was REALLY DIRTY* washing for two hours by then?  
b. \*What had already *been that was REALLY DIRTY* washed for two hours by then?  
c. \*What had already *been that was REALLY DIRTY* being washed for two hours by then?  
d. \*What had already *been being that was REALLY DIRTY* washed for two hours by then?

## Conclusion

The distribution of *wh*-associated adjuncts (e.g., *exactly/precisely*, RCs) initially seems strange.

*Wh*-movement can apparently target either the full adjunction structure [*wh* adjunct] or just the adjunction host — except that the adjunct cannot be stranded in a non-phase-edge position.

This can be explained if (25) (similar to Stepanov's 2001 obligatory late adjunction, but phase-based) holds:

- (25) **Phase-Based Obligatory Late Adjunction**  
For H a phase head and XP its associated spellout domain (= complement), adjunction within the HP phase occurs *immediately* before spellout of XP.

If (25) holds, this suggests that the **syntax prioritizes satisfying featural requirements** (selectional, EPP, Agree-related, ...) and only at the last possible moment (within each phasal subderivation) adds "inessential" or "peripheral" elements (adjuncts).

Selected references: Bošković, Ž. 2004. "Be Careful Where You Float Your Quantifiers." *NLLT* 22: 681-742. Fox, D. 2002. "Antecedent-Contained Deletion and the Copy Theory of Movement." *LJ* 33: 63-96. Fox, D. and J. Nissenbaum. 2006. "Extrapolation and scope: A case for overt QR." In *Syntax: Critical Concepts in Linguistics*. Ed. R. Freidin and H. Lasnik. London: Routledge. 51-64. Harwood, W. 2015. "Being progressive is just a phase: celebrating the uniqueness of progressive as a phase-based analysis." *NLLT* 33: 529-73. Lebeaux, D. 1991. "Relative Clauses, Licensing, and the Nature of the Derivation." *Syntax and Semantics* 5: 209-29. McCloskey, J. 2000. "Quantifier Float and *Wh*-Movement in Irish English." *LJ* 31: 57-84. Stepanov, A. 2001. "Late Adjunction and Minimalist Phrase Structure." *Syntax* 4: 94-125. Stroik, I. 2009. Locality in Minimalist Syntax. Vol. 51. Cambridge, MA/London, England: MIT Press. LI Monographs. Urban, E. 1999. "Exactly stranding." M.A. thesis, UCSC.