**Introduction.** Since Lebeaux (1991), there has been great interest in the hypothesis that syntactic structures are not built in a completely cyclic, bottom-up fashion, but rather, some elements—in particular, adjuncts—can be merged late, or countercyclically. Here, I argue that previously unnoticed facts about adjunct stranding in English show that adjuncts not only can but must be merged late—shedding new light on the relative timing of adjunction, movement, and phasal spellout.

**Background: adjunct stranding.** Certain adverbs, including exactly and precisely, can be associated with an interrogative wh-phrase. When so associated, an adverb of this type can either move with the wh-phrase to [Spec,CP] ((1a)) or be stranded by it ((1b)) (Urban 1999, a.o.).

(1) a. Who exactly did they blame?

b. Who did they blame exactly?

I analyze both (1a) and (1b) as involving adjunction of exactly to who, forming the following structure: 

\[
[\text{DP}[\text{WH}][\text{DP}[\text{WH}][\text{who}]][\text{AdvP exactly}]].
\]

Wh-movement can affect either the larger DP formed by adjunction ((1a)) or the lower segment alone ((1b)); in the latter case, the adverb is stranded.

**The puzzle.** The natural assumption about the position of exactly in (1b) is that it has been stranded in the base (θ-) position of the direct object. It turns out, though, that WH-associated exactly-type adverbs apparently cannot be stranded in θ-positions. Consider the following paradigm:

(2) a. Muriel put WHAT exactly on the table with great care?!

b. Who put what exactly on the table with great care?

c. *What did Muriel put exactly on the table with great care?

d. *What did Muriel put on the table with great care exactly?

The echo question (2a) and the multiple question (2b) show that a WH-exactly constituent can be base-generated in a θ-position. When this happens, though, the wh-associate cannot be moved, stranding exactly in situ (2c). (Exactly can be stranded at or near the right edge ((2d), (1b)); I show that in these cases it occupies a position in the C-layer high enough to survive vP-fronting and sluicing.) The question, then, is: Why is WH-adjointed exactly unstrandable in θ-positions?

**Analysis.** I propose that WH-adjointed exactly is unstrandable in θ-positions because syntactic derivations obey the generalization in (3), Obligatory Late Merger of Adjuncts (OLMA):

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

That is, the system prioritizes satisfying requirements imposed by features (selectional and EPP), and only when this is finished in a particular phase does it add “inessential” elements (adjuncts).

Consider the consequences of OLMA in (4), a stage in the derivation of the sentences in (2a-c):

(4) \[\text{[vP Muriel put-v [VP what put on the table]]}\]

**Case 1:** What does not move. Adjunction takes place within the vP phase: exactly is adjoined to what, and with great care to vP. By OLMA, immediately after adjunction, the complement of the phase head v (= VP, which contains what exactly) is spelled out. Thus, when a wh-phrase does not move, it can host an adjunct in its base position. This explains the well-formedness of (2a-b).

**Case 2:** What does move. In (4), we cannot adjoin exactly to what and then move what to [Spec,vP], because adjunction is followed immediately by spellout. But we also cannot first move
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what to [Spec,vP] and then adjoin exactly to its lower copy—assuming, plausibly, that adjunction must target highest copies. So when a wh does move, its lowest copy cannot host an adjunct ((2c)).

**Predictions.** Under OLMA, it should be possible to move a wh-phrase to the phase edge; adjoin exactly to it; and, in the next phase, move the host again, stranding exactly. That is, exactly should be strandable at phase edges. This is true for CP, as exactly can be stranded in [Spec,CP]:

(5) a. What do you believe exactly (that) everyone said (that) she devoured?
   b. What do you believe (that) everyone said exactly (that) she devoured?

It is also true for the clause-internal phase, whose edge can host exactly in informal registers:

(6) a. What did they exactly do at the bar? [1 = informal]
   b. What did he exactly mean by this? [from the Internet; many examples are attested]

Informal clause-medial stranded exactly precedes passive and progressive be, supporting Harwood’s (2015) view that, when present, these auxiliaries are part of the clause-internal phase:

(7) a. *What had she been exactly sent?
   b. *What had she been exactly sending?
   c. *What had she been being exactly sent?
   d. ¹What had she exactly been sent?
   e. ¹What had she exactly been sending?
   f. ¹What had she exactly been being sent?

**Relative clauses.** The analysis also predicts that relative clauses (RCs) adjoined to wh-phrases should have the same distribution as WH-adjoined exactly ((2)). This prediction is borne out:

(8) a. Muriel put what that was slimy on the table with great care?!
   b. Who put what that was slimy on the table with great care?
   c. ?*What did Muriel put that was slimy on the table with great care?

Under OLMA, a WH-adjoined RC should be strandable in [Spec,CP]. The result ((9b)), though not perfect, is much better than sentences that try to strand RCs in non-phase-edge positions ((9c)):

(9) 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?

Finally, stranding a WH-adjoined RC at the left edge of the clause-internal phase (in Harwood’s sense) should be more acceptable than stranding it in a non-phase-edge position. This is correct:

(10) a. ?What had already · that was REALLY DIRTY been washed for two hours by then?
   b. *What had already been · that was REALLY DIRTY washed for two hours by then?

**Conclusion.** An adjunct to an interrogative wh-phrase can be stranded by the movement of its host, unless it was adjoined to the host in the latter’s base position. This seemingly odd generalization follows if adjunction within a phase HP occurs immediately before the spellout of H’s complement. Adjunct stranding, then, furthers our understanding of the timing of adjunction and other operations, with implications for our understanding of the nature of adjunction structures.