

But write what?

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1 The background

One is sitting in one's office, contemplating the snowy fields outside, when an email drops into your inbox inquiring if you would be willing to write a squib for a festschrift for Kyle. 'Of course!' one thinks. Such invitations are easily, nay joyously, accepted, and the task added to one's to-do list with a comfortably far-away date. But as the editors' deadline begins to loom, the realization sets in. *I have to write*, one thinks. *But write what?*

2 The problem

This squib, then, looks at constructions of the form in (1) (where the dash indicates a change of speaker).¹

- (1) a. The doctor told me to eat. — Eat what?
- b. People keep saying Trump's tweets and outlandish statements are a distraction. But a distraction from what?²
- c. I use a walkie-talkie. — To talk to whom?
- d. They said that they'd made it for you. — That they'd made what for me?

These cases look like sluicing, in as much as their meaning appears to be that of a constituent question, but some of the material surrounding the *wh*-phrase appears to have 'gone missing'. However, if we assume a move-plus-delete analysis of sluicing (Merchant 2001), as in (2), these data look rather mysterious. They appear to involve pied-piping of constituents that are rather more 'massive' than English speakers are

¹ I think this type of construction has only recently come under scrutiny. Ross (1969: 262ff.) discusses the impossibility of such structures in embedded cases; he notes the grammaticality of certain root cases like *He has a picture, but a picture of what I don't know* (fn. 10, the observation attributed to Joan Bresnan), but puts them aside as a mystery. Abe (2015) and Abels (2017) have recently discussed similar structures, but come to different conclusions than the ones I draw here.

² An attested example found on Al Jazeera's Facebook page, 15 March 2017.

usually comfortable pied-piping, even in matrix contexts which allow for greater freedom in this respect, as (3) shows.

- (2) a. He ate something. — What?
 b. [_{CP} What [_C did [_{TP} he eat t]]]
- (3) a. ?*[_{VP} Eat what] did the doctor tell you to t?
 b. ??[_{DP} A distraction from what] are Trump's tweets t?
 c. ??[_{TP} To talk to whom] do you use a walkie-talkie t?
 d. ?*[_{CP} That they'd made what for me] did they say t?

Despite this, the 'remnant' in this sort of construction does seem to have undergone a step of A'-movement, in as much as it seems to respect at least some of the constraints on such movement (putting aside the vexed question of the interaction of ellipsis and islands). Consider the below:

- (4) A: They told John that they had checked every room.
 a. In which building?
 b. *Room in which building?
 c. Every room in which building?
 d. Checked every room in which building?
 e. ??Had checked every room in which building?
 f. ?*They had checked every room in which building?
 g. That they had checked every room in which building?
 h. *John that they had checked every room in which building?
 i. ??Told John that they had checked every room in which building?

This pattern of judgements is consistent with the phrase containing *which building* having undergone movement. Plausibly, on this view:

- the ungrammaticality of (4b) is due to the prohibition on moving a bare NP to the exclusion of its determiner;
- the ungrammaticality of (4e) and (4i) comes from the bar on moving verb phrases headed by finite verbs in English;³
- the ungrammaticality of (4f) comes from the ungrammaticality of moving finite TPs to the exclusion of their complementizer;

³ The examples in (4e), (4i) are degraded, but better than the others. I don't know why, but will only note that I find fronting finite VPs in non-elliptical contexts to be similarly degraded-but-not-terrible: ??*Ate the natto, he certainly did* (and Scandinavian languages allow this unproblematically).

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- and the ungrammaticality of (4h) is related to the fact that an indirect object–direct object complex cannot move in English (**Him the book, I gave*; Johnson 1991: section 6).

By contrast, apart from the simple case of PP-pied-piping in (4a), the other grammatical cases, (4c), (4d) and (4g), are cases where movement is otherwise *generally* possible. DPs, non-finite verb phrases, and CPs can of course be moved. The problem is that they can't normally be pied-piped by a *wh*-phrase which is deeply embedded within them ('massive' pied-piping), as (3) shows and as discussed by Heck (2008) and Cable (2010), among many others.

These cases also differ from canonical sluicing cases in that they cannot be embedded under question-embedding verbs like *wonder* or *know*.

- (5)
- *The doctor told me to eat, but god knows eat what.
 - ??The tweets are a distraction; I wonder a distraction from what.⁴
 - *They said they'd made something for me; I don't know that they'd made what for me.

This is a general trait of massive pied-piping, as Heck and Cable discuss: massive pied-piping is degraded in root contexts (6a), but completely out in embedded contexts (6b).

- (6)
- ??[_{CP} A distraction from what [_{C'} are [_{TP} Trump's tweets t]]]?
b. *I wonder [_{CP} a distraction from what [_{TP} Trump's tweets are t]]

So the data in (1) clearly merit analysis. But an analysis of what kind?

3 *Wh*-movement, pied-piping, prosody, and ellipsis

The solution I will present for the above cases (or at least a subset of them; see Section 4 below) will build on the following ideas. Firstly, I will take as a given that there is some way of deriving the contrast between matrix and embedded 'massive pied-piping' ((6a), (6b)), and moreover, that this contrast should be derived in the syntax. I will remain neutral on how exactly this is done, but refer to Heck 2008 and Cable 2010 for suggestions. I will also assume that we have a syntactic theory that rules out moving certain constituents, ever, whether in matrix or embedded contexts. That is, we have some theory that forbids, for example, moving bare NPs to the exclusion of their determiner (as in (7)), in addition to the various other ungram-

⁴ This is OK if a large pause is left after *wonder*, which presumably represents two root clauses in paratactic juxtaposition, i.e. *I wonder: a distraction from what?*

matical movements illustrated in (4).⁵ Again, I remain agnostic on what that theory should be (indeed, the restrictions probably don't have a unitary explanation).

(7) *_[NP Book about ellipsis], I think you should read _[DP every t].

These assumptions alone serve to derive most of the properties in (4) and (5), which on their own are not too surprising. The question I will focus on is why sluicing seems to alleviate the unnaturalness of massive pied-piping in cases like (1).

- (8) The tweets are a distraction.
 a. A distraction from what?
 b. ??A distraction from what are the tweets?

A deeper question is why sentences like (8b) are degraded to start with. An even deeper question is why English speakers move *wh*-phrases to the left periphery in the first place (given that there are perfectly good semantic mechanisms for interpreting *in situ wh*-structures). The solution I would like to sketch to all of these questions draws on the proposal by Richards (2010: ch. 3) that the driver of *wh*-movement is in fact a condition on the syntax-prosody interface. Suppose, as Richards proposes, that there is a constraint on the syntax-prosody mapping roughly of the form in (9).

- (9) ALIGN(*wh*, C)
 There should be as few phonological phrase boundaries as possible between a *wh*-marked constituent and the complementizer.

One obvious way of satisfying (9) is to move the *wh*-item to SpecCP.⁶

- (10) a. *You gave what to John?⁷
 b. (_ι C you (_φ gave what) (_φ to John))⁸
- (11) a. What did you give to John?

⁵ This is what I referred to as movement unavailable 'even in principle' in Weir 2014a: ch. 4.

⁶ The prosodic rules available to a given language, as well as the position of complementizers (whether at the left or right edge of a clause), will influence what the preferred 'repair' is, as Richards discusses in detail. Here I focus on the solution that English generally chooses (on this analysis), which is (syntactic) movement. Richards also discusses the fact that syntactic movement here appears to be 'looking ahead' to the needs of phonology. I think independent facts about 'exceptional movement under ellipsis' force us to similar conclusions (Weir 2014a: ch. 4).

⁷ This is only grammatical on an echo-question reading. See Richards 2010: 198 for some interesting discussion of echo questions in the present system.

⁸ ι = Intonational Phrase, the prosodic domain which CPs are mapped onto; ϕ = Phonological Phrase, the prosodic domain which lexical XPs are mapped onto (see e.g. Selkirk 2011). The prosodic phrasing I show in (10b) and (11b) is very rough — it is simply meant to illustrate the general idea.

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- b. (_i what C+did you (_φ give) (_φ to John))

In (10b), the phonological phrase boundary to the left of *gave* intervenes between the *wh*-phrase and the complementizer; in (11), movement fixes this problem.

On this view, the syntax might have no particular problem with a massive pied-piping movement like (8b); we can assume, perhaps, that such movements (at least in root clauses) are freely available in the syntax, modulo the ‘hard’ constraints on A'-movement discussed above (no separating NPs from their Ds, etc.). It is degraded, not because the syntax rules it out, but because — if we assume that the DP in which the *wh*-word is embedded will introduce its own phonological phrase boundary on its right edge — the movement doesn't get the *wh*-phrase very much closer to the C, in phonological terms (some prosodic structure abbreviated below).

- (12) a. ??A distraction from what are the tweets?
b. (_i (_φ a distraction (_φ from what)) C+are the tweets)

But now suppose that sluicing involves A'-moving the ‘remnant’ to the left periphery (perhaps to evacuate it from the ellipsis site; Weir 2014a: ch. 4, among others) and the subsequent deletion at PF of all other material — including the C head.⁹

- (13) a. [_{CP} A distraction from what [_C ~~are the tweets~~ t]]
b. (_i (_φ a distraction (_φ from what)))

The constraint in (9) is satisfied **vacuously** in (13b). There is no C, so there are also no phonological phrase boundaries between the *wh*-word and the C. Sluicing, then, creates an environment in which ‘massive pied-piping’ is quite generally available — as long as the constituent which is pied-piped can independently undergo A'-movement. That's what leads to the constellation of judgments in (4).

4 The modal parse

A very similar-looking construction, but one that I believe to have a different etiology than the one discussed above, is exemplified below.

- (14) The trainer told me to run, but run where?

An example like (14) can be followed up with something like *The public parks aren't suitable and I can't afford the gym*; that is, the interpretation is something like ‘Where should I run/where am I supposed to run?’ A curiosity about this reading

⁹ See Merchant (2001)'s Sluicing-COMP generalization. Interestingly Abels's (2017) proposal also hinges on the deletion of the complementizer, though with syntactic rather than prosodic ramifications.

is that it goes away if the ‘massively pied-piped’ *wh*-phrase is any ‘bigger’ than a bare *vP*, for example if it is a participle or non-finite TP.

- (15) The trainer told me to start running.
- a. But run where?
 - b. #But running where?
 - c. But start running where?
 - d. #But to start running where?

Note that (15b) and (15d) are infelicitous rather than ungrammatical as such; they imply amnesia on the part of the speaker about what the trainer said. They become acceptable if uttered as information-seeking questions by another:

- (16) The trainer told me to start running. — (To start) running where?

If a bare *vP* containing a *wh*-phrase is generated as a fragment, then, it appears to have two readings. The first is paraphrasable as a simple constituent question (= ‘Where did the trainer tell me/you to run?’), a reading which is shared with ‘bigger’ examples such as (16). I assume that such cases receive a ‘massive pied-piping + sluicing’ analysis along the lines sketched in Section 3 above. However, there is another reading, which is paraphrasable by a kind of priority modality as in (14).

This is reminiscent of a slightly more familiar construction with *why*, which has a similar modal semantics (17a). Just as in the above cases, that modal semantics is not available if *why* is in construction with something ‘larger’ than a bare *vP*, e.g. a participle or non-finite TP; in fact such cases are simply ungrammatical (17b).

- (17) a. Why worry? Why take oneself so seriously?
 (≈ why should one worry? why should one take oneself so seriously?)
 b. *Why to worry? *Why worrying?

I think one can sketch a syntax for constructions like (17a) something like (18). A *vP* is built which contains a PRO_{arb} subject. Above this is inserted a *ModP* containing a covert priority modal, with a meaning something like *should*; I represent this as \square . To host *why*, a *ReasonP* is merged immediately above this projection (Shlonsky & Soare 2011), and then the derivation simply stops.¹⁰

- (18) [_{ReasonP} why [_{ModP} \square [_{vP} PRO_{arb} worry]]]

¹⁰ See Weir 2014b for discussion of this kind of syntax in connection with ‘*why*-stripping’ (Yoshida et al. 2015). I rejected (18) as a structure for *why*-stripping in general, but it may be the right structure for this kind of *why+vP* case. Clearly something more needs to be said about where the priority modal is coming from. We might hope that there is some link here with the fact that non-finite contexts in general seem to make (covert) priority modality available (cf. Bhatt 2006).

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In this syntax, there is no CP layer, which is potentially why such constructions do not embed—the CP which embedding verbs would select for is not present.

(19) ??I wonder/don't know why worry.

I suggest that examples like those in (14) can also be folded into this structure. The lack of a CP layer in such structures means that *wh*-words will not move from their first-merge positions (argument position for words like *what*, *vP*-internal adjunct position for words like *where*, ReasonP for *why*). Following the logic outlined above, if there is no complementizer, then these *wh*-words have no need to move to get closer to a complementizer:

(20) [_{ModP} □ [_{vP} PRO run where]] (≈ where should PRO run?)

On this view, there is no sluicing or pied-piping (massive or otherwise) necessarily involved in the construction of examples like (14). On at least one of their parses, such examples are simply base-generated *vPs* plus a covert priority modal. With this said, one might speculate that such *vPs* might themselves be able to undergo sluicing (i.e. deletion of everything in them except the *wh*-phrase), and that this might help with some sluicing examples whose pre-elliptical source is otherwise somewhat mysterious, as in (21a) (adapted from Thoms 2013), though obviously many details remain to be elaborated here (e.g whether *with what* is undergoing movement to escape the ellipsis in (21b), and if so, where it is moving to).

(21) a. Amuse me! — With what? (≈ with what should I amuse you?)
b. [_{ModP} □ [_{vP} PRO amuse you with what]]

5 Inconclusion

'Many questions remain' (Johnson 1991: 629). There is, perhaps, something slightly suspect in appealing to vacuous satisfaction of the phonological constraint suggested in (9).¹¹ There's also something arguably a bit strange about there being a prosodic condition on an element (a [wh]-complementizer) which is after all silent in English (although this is a problem that the present analysis inherits from Richards's (2010) analysis, at least if it is to be extended to English). And we would like to know in more detail where the modal force is coming from in examples like those in section 4, as well as why it should be possible to construct a root utterance that simply 'stops' at or just above the *vP* level (though perhaps the literature on imperatives can help with both of these problems). However, I hope that I have at

11 Perhaps one way of assuaging this worry is to envisage (9) as fundamentally a constraint on [wh]-complementizers (rather than on *wh*-words themselves)—it is the C that must have a *wh*-word in its prosodic domain, so if you get rid of the complementizer by PF, you have no problem.

least shown that there are some interesting questions to be answered — a skill that I am still practicing, but which, to the extent I have it, is due in no small part to Kyle’s tutelage.

Happy birthday, Kyle! Have cake — but have *how much* cake?

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