

A unified theory of meta-questions*

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Abstract

We propose a unified analysis of “meta questions”, a variety of questions about the intentions behind a speech act, among them “Echo-questions”. We analyze meta questions as run-of-the-mill questions in which a wh-Phrase covertly scopes over silent speech-act-material. The silence of the speech act material and the covertness of the movement are derived from independently motivated constraints in the theory of spell-out. The analysis explains a restriction on recursion of silent speech acts, more specifically the limited distribution of meta-meta questions (Trinh 2024).

1. Echo questions

We start with an analysis of “echo questions”, exemplified by (1-B₁).

- (1) A₁: Did you talk to Mary?
B₁: **Did I talk to who?** → Echo question
A₂: Did you talk to Mary.
B₂: No. I did not talk to Mary.

Echo questions are often informally characterized as a request from the interlocutor to repeat her utterance, with the in-situ wh-phrase marking the position of the phrase that the speaker especially wants the interlocutor to repeat (maybe because they didn’t hear it well or are very surprised by it). But what is the semantics that explains this use and how does it come about? Clearly, (1-B₁) is not interpreted like its “normal”, ex-situ, parallel ‘who did

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I talk to?'. B is not asking A to provide the identity of the person B talked to. Rather, B is a question about A's own question. B is asking A something paraphrasable as (2).¹

- (2) Paraphrase of (1-B₁): *who is the person x such that you are asking whether I talked to x?*

We propose that the LF of echo questions wears the paraphrase in (2) on its sleeves, that is, that (1-B₁) has an LF structure such as (3), where gray indicates silent, i.e. non-spelled out, material. Henceforth, we will use subscripts to indicate the reference of pronouns. Thus, the pronoun 'you' and 'I' in (3) refer to A and B, respectively.

- (3) LF of (1-B₁): [_α who_I [_β you_A ask [_γ whether I_B talked to who_I]]]
↑-----
 'which person x is such that you_A ask whether I_B talked to the person x'²

This structural analysis accounts for the intuition that (1-B₁) fits naturally between (1-A₁) and (1-A₂): it is consistent with the assumption, conveyed by (1-A₁), that B does, but A does not, know who B talked to, and it is a question which (1-A₂) directly addresses.

The crucial claim here is that there is 'you_A ask' intervening between 'whether' and the upper 'who'. Borrowing from previous works, we will use the term SPEECH ACT OPERATORS as descriptive label for such material as 'you_A ask' in (1). 'you_A ask' is not the only speech act operator possible in echo questions; for example, an analogous analysis is available with 'you_A say' replacing 'you_A ask'. Our approach to echo questions can therefore be summarized as in (4).

(4) **Echo questions**

An echo question is a regular question at LF, with a (covertly moved) wh-phrase scoping over a (silent) speech act operator.

This proposal immediately raises the questions of why the wh-phrase 'who' appears in-situ rather than ex-situ and why the speech act operator is silent. In other words, why is everything above β silent in (3)? (we address the silence of 'whether' in fn.3.) We propose to use an independent principle of spell-out to explain this. Specifically, following Chomsky (2001), and others, we adopt the principle in (5).

(5) **Spell-Out Principle**

Spell out applies to all and only complements of phase heads.

¹The intuition that (1-B₁) has the meaning in (2) was expressed in Noh (1998), Ginzburg and Sag (2001), Artstein (2002), Beck and Reis (2018). One attempt at formalizing this intuition that we know of is made by Li (2019). Li's analysis differs from ours in several ways, most importantly in that Li postulates an ECHO operator whereas we attempt to reduce the effects of a dedicated ECHO operator to more general properties of speech act operators, thus allowing us to generalize to other "meta-questions".

²The reader may be asking why (3) is not ruled out as a subjacency violation, given that 'who' moves out of γ which is a wh-island. We will attempt to address this question in section 1.5.

For present purposes, we will say that speech act verbs such as ‘ask’ are phase heads. It follows that nothing above γ is spelled out in (3) because γ is the largest phasal complement in the structure (i.e. one that is not dominated by any phasal complement). And since the upper copy of ‘who’ is in a non-spelled out region of the tree, it is the lower copy that is spelled out, i.e. the wh-phrase appears in situ.³ The statement in (6) delivers this.

- (6) **Wh-movement and spell-out.** Wh-movement which is designated as “overt” is pronounced in the scope position (overt movement) if this position is within a spelled-out domain, otherwise it is covert (i.e. the wh-phrase is spelled-out in situ).

The Spell-Out Principle commits us to the claim that every sentence contains tree-top silent material (at least one silent head). The sentences in (1), for example, have the structures in (7).⁴

- (7) A₁: Did you talk to Mary?
 [α I_A ask [β whether you_B talked to Mary]]
 B₁: Did I talk to who?
 [α who₁ [β you_A ask [γ whether I_B talked to who₁]]]
 A₂: Did you talk to Mary.
 [α I_A ask [β whether you_B talked to Mary]]
 B₂: No. I did not talk to Mary.
 [α I_B say [β I_B did not talk to Mary]]

One independent motivation for the spell-out principle in (5) is that it enters into an explanation of the necessity of successive cyclic movement (as Chomsky 2001 argued). If we add to (5) the assumptions that spell-out applies at the phase level and that it is impossible for a phrase to move out of a constituent that has been spelled-out, it follows that movement out of each phase P must proceed through the edge of P before spell-out applies at P. Bošković (2016:p.26) raises an objection to (5): if only phasal complements are sent to spell-out, matrix clauses will never be sent to spell-out. This paper embraces this seemingly implausible consequence: we adopt the spell-out principle in full generality, and claim that properties of meta-questions follow precisely from the fact that matrix sentences are not spelled-out completely: it is the speech-act material that “licenses” the pronounced material of matrix clauses.

³Note, also, that the final pronunciation of γ in (3) is ‘did I talk to who’, i.e. without pronouncing ‘whether’ and with T-to-C movement. We assume that non-spelled out ‘ask’ requires ‘whether’ in [Spec,C] to be spelled out as \emptyset , i.e. the zero segment, and triggers T-to-C movement. We will not attempt to derive these assumptions. Notational distinction is therefore made, using font colors, only between spelled out ‘whether’ and non-spelled out ‘whether’, not between ‘whether’ spelled-out as ‘wɛðə’ and ‘whether’ spelled out as ‘ \emptyset ’. We are also not concerned with T-to-C movement, hence do not indicate it in (3) or in other representations.

⁴The reader can see that we do not subscribe to the view that a question speech act can only be performed by using a sentence containing a matrix ‘I ask’: (7-A₁) has matrix ‘I ask’ while (7-B₁) does not, but both are used to ask a question. Thus, we are not endorsing the so-called “Performative Hypothesis” as proposed by Ross (1970), Lakoff (1970), Sadock (1974), among others, according to which e.g. an assertion always requires a tree-top ‘I say’, a question always requires a tree-top ‘I ask’, etc. in the structure.

In what follows we apply our question-about-speech-act analysis not just to echo questions, but to a variety of other non-canonical questions discussed in the literature. These “**meta-questions**” will include so-called Quiz questions (Comyn 2013), Repetitive questions (Trinh 2024), Declarative questions (Gunlogson 2002) and Excursive questions (Trinh and Bassi 2023). We get to such meta-questions in section 2. But before we get there, in the next subsections we show that our analysis accounts for several previously observed (yet unexplained) properties of echo questions (Iwata 2003, Sudo 2007, Beck and Reis 2018).

1.1 Echo questions contain regular wh-phrases

Since we take echo questions to be regular questions, we expect there to be no specialized “echo” question word. This expectation is borne out: the target wh-phrase in echo questions are just those seen in “normal” questions. We have considered an example with ‘who’. Below are examples with ‘what’ and ‘where’.⁵

- (8) A: Did you buy the book?
 $[\alpha I_A \text{ ask } [\beta \text{ whether you}_B \text{ bought the book}]]$
 B: Did I buy what?
 $[\alpha \text{ what}_1 [\beta \text{ you}_A \text{ ask } [\gamma \text{ whether } I_B \text{ bought what}_1]]]$
- (9) A: Did you live in Cambridge?
 $[\alpha I_A \text{ ask } [\beta \text{ whether you}_B \text{ lived in Cambridge}]]$
 B: Did I live where?
 $[\alpha \text{ where}_1 [\beta \text{ you}_A \text{ ask } [\gamma \text{ whether } I_B \text{ lived where}_1]]]$

1.2 Echo questions are insensitive to sentence types

In every example we have considered so far, the speech act verb is ‘ask’, which means that what is being echoed is itself a question (‘whether B talked to NP’). However, as mentioned earlier, the wh-phrase can scope over other speech act verbs such as ‘say’ or ‘request’. We thus expect to find questions that echo declaratives or imperatives. This expectation is borne out, as has been noted in the literature.⁶

- (10) A: I talked to Mary
 $[\alpha I_A \text{ say } [\beta I_A \text{ talked to Mary}]]$
 B: You_A talked to who? → Echoing a declarative
 $[\alpha \text{ who}_1 \text{ you}_A \text{ say } [\beta \text{ you}_A \text{ talked to who}_1]]]$
- (11) A: Talk to Mary!
 $[\alpha I_A \text{ request } [\beta \text{ pro}_B \text{ talk to Mary}]]]$

⁵For more involved echo questions, see Artstein (2002). His proposals are compatible with our approach, as far as we can tell.

⁶We assume that the subject of imperatives is the silent pronoun ‘pro’.

B: Talk to who? → Echoing an imperative
[α who₁ you_A request [β pro_B talk to who₁]]

1.3 Echo questions cannot be ex situ

We also predict that ex situ questions cannot have the echo reading. Consider (12).

- (12) A₁: Did you talk to Mary?
B₁: #Who did I talk to?
A₂: #Did you talk to Mary.
B₂: No. I did not talk to Mary.

If (12-B₁) could express the “echo” question Q = ‘which person x is such that you_A ask whether I_B talked to x ’, it would fit naturally between (12-A₁) and (12-A₂). But (12-B₁) clearly doesn’t fit between (12-A₁) and (12-A₂): it sounds odd after (12-A₁) and (12-A₂) sounds odd after it.

Our explanation is straightforward: given the Spell-Out Principle, Q cannot be expressed by pronouncing the string in (12-B₁). Before we show why that is the case, let us note that spelling out a constituent means spelling it out completely. Now, Q can be expressed by either the structure in (13a) or the structure in (13b). We can see that in order to pronounce (13a) as (12-B₁), we would have to spell out material that are not part of any phasal complement, and in order to pronounce (13b) as (12-B₁), we would have to spell out a phasal complement incompletely. In both cases, the Spell-Out Principle is violated.

- (13) a. [α who₁ you_A ask [β whether I_B talked to who₁]]
b. [α I ask [β who₁ you_A ask [γ whether I_B talked to who₁]]]

We predict that (13b) is ok with ‘you_A ask’ pronounced. But there is a confound, since pronouncing ‘(who) you ask’ creates a wh-island configuration which independently results in ungrammaticality (see section 1.5 below for why the version where ‘(who) you ask’ is not spelled-out does not create an island problem). However, we can test the prediction in languages that have resources to avoid the island problem, e.g. by using resumptive pronouns. In Hebrew, which behaves like English in all aspects discussed so far, the version of (13b) is ok with ‘you ask’ pronounced and with a resumptive pronoun at the tail.

1.4 Echo questions cannot be embedded

Echo questions are known to be unembeddable. This is evidence by the contrast between (14-B₁-i) and (14-B₁-ii).

- (14) A₁: John talked to Mary.
B₁: (i) John talked to who?
(ii) *I didn’t hear (that) John talked to who.
(iii) I didn’t hear who you’re saying that John talked to.

Again, our explanation is that (14-B₁-ii) is just not a possible pronunciation of the structure that represents the intended meaning. The echo question in (14-B₁-i) has the structure in (15a). The structure which represents this question being embedded under ‘I didn’t hear’ and which, at the same time, is intended to yield the string in (14-B₁-ii), is (15b).⁷

- (15) a. [γ who₁ you_A say [δ John talked to who₁]]
 b. [α I_B say [β I didn’t hear [γ who₁ you_A say [δ John talked to who₁]]]]

As we can see, (15b) is a violation of the Spell-Out Principle: the phasal complement β is not spelled out completely. The pronunciation in (14-B₁-iii), however, does abide by it.

1.5 Echo questions are insensitive to islands

As mentioned in footnote 2, the structure in (3) – like the structure of every echo question in which the speech act verb is ‘ask’ – involves a wh-phrase moving out of a wh-island. The question is why the sentences are not ruled out as subjacency violations. More generally, why are echo questions insensitive to islands? Examples given in the literature as evidence for this insensitivity are usually of the same type as (16-B), where an island can be detected in the overt syntactic material.

- (16) A: Do you believe the claim that John talked to Mary?
 B: Do I believe the claim that John talked to who?

According to our analysis, the structure of (16-B) is (17), which means ‘who’ crosses not one but two islands: γ and β .

- (17) [α who₁ you_A ask [β whether I_B believe [γ the claim that John talked to who₁]]]
 ↑

Our account for the island-insensitivity of echo questions will be (18), which is a well-known generalization about in-situ wh-phrases (cf. Huang 1982).

- (18) **In-situ Generalization**
 In situ wh-phrases can appear in islands

Recall the sense in which we take a wh-phrase to be in situ: it is the lower copy of a chain whose higher copy is located in a non-spelled out region of the structure. In other words, it is a wh-phrase that has moved covertly (Bobaljik 2002, Bachrach and Katzir 2017). We

⁷Note that (i), pronounced with a break between ‘you’ and ‘John’ as indicated by the colon, is acceptable.

- (i) I didn’t hear you: John talked to who?

Arguably, (i) manages to convey what (14) is intended to convey. What distinguishes between (i) and (14-B₁-ii) is that the former is not an embedding structure while the latter is. We take this to be evidence that the problem with (14-B₁-ii) is its structure, not its pragmatics.

should note that there are proposals to derive (18) which assume a notion of scope-taking without covert movement (see Pesetsky 1987, Reinhart 1998). We believe our account of echo questions and, later on, of meta-questions, can be made compatible with such approaches. For presentational purposes, we choose the “lower copy spell out” approach and take (18) as a primitive.⁸

2. Meta-questions

We have shown how observations about echo questions can be derived from an analysis which takes them to be regular questions involving covert movement over a silent speech act operator (SO). Call this formal property the ECHO PROPERTY.

- (19) **Echo Property**
[α wh [β SO ϕ]]

We expect the Echo Property to identify a natural class of META QUESTIONS which could in principle contain those that have not been labeled as echo questions. In what follows we present several examples that we believe bear out this expectation. Below each example, we provide our analysis of it in terms of the Echo Property (henceforth “EP analysis”).

2.1 Quiz questions

To start, consider so-called “quiz questions”, or “probing questions”, which are often used in the contexts of quiz shows or classrooms, under the assumption that the speaker, who may be presumed to know the answer, is prompting the addressee to provide it (Comyn 2013, Nguyen and Legendre 2020). Two examples are given in (20), of which the first, (20a), is the title of Comyn (2013), and the second is our own.

- (20) a. Wh-in-situ is accompanied by which formal features?
[which formal features you say [wh-in-situ is accompanied by which formal features]]
b. OK, you didn’t see the victim when you visited his home at 8 PM, the time of the murder. You were there for what purpose exactly?
[what purpose you say [you were there for what purpose]]

An EP analysis of quiz questions explains their distinctive formal feature – the fact that they contain an in situ wh-phrase. At the same time, the analysis makes sense of their otherwise puzzling pragmatics – it explains how they can satisfy the general requirement that a question can only be asked by someone seeking some missing information: the speaker clearly knows the answer to the canonical versions of the questions (e.g., in the case of (20b), ‘for what purpose exactly were you there?’); the addition of the matrix speech act

⁸Another approach going back to Huang (1982) is to assume that covert movement is insensitive to some but not all of the islands that restrict overt movement (ECP vs subjacency). Space limitations do not allow us to explore the predictions that might follow under this approach.

operator ‘you say’ within the scope of the wh-phrase makes it clear that the speaker is asking for the answer that *the addressee* would give to the question, information that is indeed unavailable to the person asking the question, thus satisfying the general requirement.

2.2 Excursive questions

Trinh and Bassi (2023) discuss “excursive questions”, exemplified by (21-B₁), which they describe as questions that invite the addressee to make an “excursion”, or a “detour”, in order to settle a side issue before coming back to the main line of the conversation.

- (21) A₁: Did you talk to Mary?
 [α I_A ask [β whether you_B talked to Mary]]
 B₁: **Did I talk to Mary when?** → “Excursive” question
 [α when₁ you_A ask [β whether I_B talked to Mary when₁]]
 A₂: Yesterday.
 B₂: No I didn’t. But I did talk to her last week.

An EP analysis of excursive questions explains why the target wh-phrase is in situ and, also, the intuition that the speaker is asking for a clarification, or precisification, of the previous question.

2.3 Repetitive questions

Trinh (2024) discusses “repetitive questions”, exemplified in (22-A₂). These are yes/no questions that repeat an immediately preceding yes/no question. The repetition is verbatim modulo changes in pronominal ϕ -features.

- (22) A₁: I have to be home for dinner.
 [α I_A say [β I_A have to be home for dinner]]
 B₁: Are you married?
 [α I_B ask [β whether you_A are married]]
 A₂: **Am I married?** → “Repetitive” question
 [α whether you_B ask [β whether [γ I_A am married]]]
 B₂: Yes. Are you married.
 [α I ask [β whether you_A are married]]
 A₃: No. I’m single.

An EP analysis of (22-A₂) explains an obvious fact about this question: it is not asking whether A is married, but rather whether B is asking whether A is married.

2.4 Declarative questions

Finally, Gunlogson (2002) discusses “declarative questions”, exemplified by (23-B). These are yes/no questions that show declarative word order (i.e. no subject auxiliary inversion).

- (23) A: I have to be home for dinner.
[α I_A say [β I_A have to be home for dinner]]
B: **You're married?** → “Declarative” question
[α whether you_A say [β you_A are married]]

An EP analysis of declarative questions does justice to the intuition that underlie several analyses of these, namely that they ask not ‘whether ϕ ’ but ‘whether the addressee asserts/implies/is committed to the proposition ϕ ’ (Gunlogson 2002, 2003, Trinh and Crnic 2011, Krifka 2017). It also provides us with a natural way to account for the declarative word order: we can say that because the embedding speech act verb is ‘say’, not ‘ask’, there is no trigger for T-to-C movement in the embedded CP (see note 3).

3. Meta-meta-questions

Echo questions thus turn out to be special cases of meta-questions, i.e. those with a silent wh-phrase scoping over a silent speech act operator. Other instances of meta-questions include quiz questions, excursive questions, repetitive questions, and declarative questions. From the examples discussed, it's clear that meta-questions have various uses. What unites them is that they involve a speech act which, in turn, is concerned with another speech act.

A natural question to ask at this point is whether asking a “meta-meta-question” is possible. Pragmatically, it should be: it is coherent to perform a speech act which concerns a speech act which, in turn, concerns another speech act: (24) is perfectly acceptable.

- (24) Are you asking me whether I'm asking you whether you're married?

Grammatically, asking a meta-meta-question means constructing a sentence which contains a silent speech act operator scoping over another silent speech act operator. For example, it means conveying (24) with (25a), which would have the analysis in (25b).

- (25) a. Are you married?
b. [α whether you ask [β whether I ask [γ whether you are married]]]

Intuitively, (25a) cannot convey (24), which suggests that (25b) is grammatically unavailable. This is what we predict: the Spell-Out Principle (5) implies that there is exactly one silent speech act operator in every sentence: it allows (26a), where the phasal complement β is spelled out in full, and disallows (26b), where it is not.

- (26) a. [α SO β]
b. * [α SO [β SO γ]]

In other words, we predict that meta-meta-questions are not possible. Let us discuss some examples to confirm this prediction, starting with (27), which shows that repetitive-questioning a declarative question is not possible (an unexplained observation in Trinh 2024).

- (27) A₁: I have to be home for dinner.
 [α I_A say [β I_A have to be home for dinner]]
 B₁: You're married?
 [α whether you_A say [β you_A are married]]
 A₂: **#I'm married?**
 [α whether you_B ask [β whether I_A say [γ I_A am married]]]
 B₂: Yes. You're married?
 [α whether you_A say [β you_A are married]]
 A₃: No. I'm single.

The reader may ask whether it is the pragmatics of (27-A₂) that is the cause of its unacceptability. We believe the answer is no. For one, pronouncing the grey material in (27-A₂) in the appropriate way is perfectly fine. Second, compare this exchange to the almost identical, but felicitous, exchange we saw earlier in (22), in the discussion of repetitive questions. There, a “normal” yes/no question with subject auxiliary inversion is used instead of a declarative question. Whatever the pragmatic difference is between (22-B₁) and (27-B₁), it is unlikely to play a role in these contexts. Thus, the contrast between these two sentences strongly suggests that the deviance of (27-A₂) is due to its structure.

Next, consider (28). Suppose that A is appalled that B uses the expression ‘the idiot’ to refer to John in B’s echo question. If meta-meta-questions were possible, we could imagine the conversation going on as in (28). However, it is clearly halted at (28-A₂), which is deviant, as predicted.

- (28) A₁: Give the book to John!
 [α I_A request [β pro_B give the book to John]]
 B₁: Give what to the idiot?
 [α what₁ you_A request [β pro_B give what₁ to the idiot]]
 A₂: **#Give what to who?**
 [α who₂ you_B ask [β what₁ I_A request [γ pro_B give what₁ to who₂]]]
 B₂: Give what to the idiot, John.
 [α what₁ you_A request [β pro_B give what₁ to the idiot, John]]
 A₃: Give the book to John! And John, BTW, is not an idiot.

Finally, (29) shows that it is not possible to repetitive-question an excursive question.

- (29) A₁: Did you talk to Mary?
 [α I_A ask [β whether you_B talked to Mary]]
 B₁: Did I talk to Mary when?
 [α when₁ you_A ask [β whether I_B talked to Mary when₁]]
 A₂: **#Did you talk to Mary when??** (*are you really asking me that??*)
 [α whether you_B ask [β when₁ I_A ask [γ whether you_B talked to M. when₁]]]
 B₂: Yes. Did I talk to Mary when.
 A₃: Did you talk to Mary yesterday.
 B₃: No I didn't. But I did talk to her last week.

4. Fragment meta-meta-questions

Spelled out constituents can still end up being silent, due to ellipsis. This is relevant to what we will now say about a kind of excursive questions discussed in Trinh and Bassi (2023), exemplified by (30-B₁). Here we see the *wh*-phrase appears in isolation as fragment. Assuming that only constituents can be elided, the analysis in (30-B₁-i) is not available. We are left with the analysis in (30-B₁-ii): ‘when’ moves overtly to its scope position within β , which is a phasal complement. After β is spelled out, i.e. sent off to the phonological component, it undergoes sluicing, or more precisely sprouting, which results in ellipsis of the sister of ‘when’ (we mark ellipsis with strikethrough).

- (30) A₁: Did you talk to Mary?
 [α I_A ask [β whether you_B talked to Mary]]
 B₁: When?
 (i) * [α when₁ you_A ask [β ~~whether I_B talked to Mary~~ when₁]]
 (ii) [α I_B ask [β when₁ you_A ask [γ ~~whether I_B talked to Mary~~ when₁]]]

As nothing prevents us from merging a (silent) ‘whether’ to α in (30-B₁-ii), we predict that (31-A₂) is possible, as observed.⁹

- (31) A₁: Did you talk to Mary?
 [α I_A ask [β whether you_B talked to Mary]]
 B₁: When?
 [α I_B ask [β when₁ you_A ask [γ ~~whether I_B talked to Mary~~ when₁]]]
 A₂: When?? (*are you really asking me that??*)
 [α whether you_B ask [β when₁ I_A ask [γ ~~whether you_B talked to M.~~ when₁]]]
 B₂: Yes, when?
 A₃: Yesterday.
 B₃: No, I didn’t. But I did talk to her last week.

Note that there is arguably no difference between (31) and (29) in terms of pragmatics: (31-A₂) accomplishes exactly what (29-A₂) is intended to accomplish. The difference in acceptability between them suggests that what is at play is structure, not function.

Since fragment meta-questions involve overt movement of the *wh*-phrase, we expect them to be more sensitive to islands than full meta-questions in which the *wh*-phrase moves covertly. This expectation seems to be borne out, as evidenced by the contrast between (32-B) and (33-B).

- (32) A: Can you see the man who talked to Mary?
 B: Can I see the man who talked to Mary when?
 [α when₁ you_A ask [β whether I_B can see the man [who talked to M. when₁]]]

⁹We owe this example to Dan Goodhue.

- (33) A: Can you see the man who talked to Mary?
 B: *When?
 [α I_B ask [β when₁ you_A ask [γ whether I_B can see the man [who talked to Mary when_T]]]]

5. Conclusion and open questions

Here is the picture we are left with: echo questions, quiz questions, excursive questions, repetitive questions, and declarative questions are just ordinary questions containing ordinary words with their ordinary semantics: ‘what’, ‘where’, ‘when’, ‘who’, ‘you’, ‘I’, ‘say’, ‘ask’, etc. There is no special “echo operator”. Neither, in fact, is there a special “speech act operator”. The pronunciation of linguistic expressions is subject to a general constraint: the Spell-Out Principle. Questions are no exception.

Our analysis, nevertheless, leaves a number of questions open. One pertains to the sprouting analysis of (31-B₁). There we see that ‘when’ moves overtly out of a whether-island. Now, sprouting is known to be subject to whether-islands (Chung et al. 1995, Barker 2013), as evidenced by the deviance of (34).

- (34) #Bill asked whether John talked to Mary, but I don’t know when ~~Bill asked whether John talked to Mary when~~

The fact that (31-B₁) is not deviant therefore poses a challenge for our analysis. Though, see Romero 1998 for a perspective on sprouting that might be able to address this challenge.

Another open question pertains to speech act adverbs. Consider the sentence in (35).

- (35) Frankly, you’re not that smart.
 a. [α Frankly I say [β you’re not that smart]]
 b. [α I say [β frankly you’re not that smart]]

The problem (35) poses is that our account, as it stands, cannot connect the right pronunciation with the right meaning for this sentence. Semantically, ‘frankly’ is often viewed as a modifier of ‘I say’, as in (35a), which means it cannot be spelled out, hence cannot be pronounced. But ‘frankly’ is pronounced, which means it should scope below ‘I say’, as in (35b), but then we get the wrong meaning (c.f. Mittwoch 1977, Boër and Lycan 1980). One possible way out of this dilemma is to consider a split analysis of the adverb, according to which it consists of a covert part which is interpreted and occurs above ‘I say’, and an overt part which is pronounced and occurs under ‘I say’ (see Hirsch 2017 for an analysis of ‘only’ in the same spirit). We will leave the task of fleshing out such an analysis and its predictions for ‘frankly’ and possibly other speech act adverbs to future work.

Finally, there is also a question regarding recoverability. What makes ‘say’, but not ‘hope’, recoverable? In other words, why can (36) be analyzed as (36a) but not (36b)?

- (36) It’s raining.

A unified theory of meta-questions

- a. I say it's raining
- b. #I hope it's raining

We hope to pursue these questions in future research.

References

- Artstein, Ron. 2002. A focus semantics for echo questions. In *Workshop on Information Structure in Context*, ed. by Ágnes Bende-Farkas and Arndt Riester, 98–107. IMS, University of Stuttgart.
- Bachrach, Asaf, and Roni Katzir. 2017. Linearizing structures. *Syntax* 20:1–40.
- Barker, Chris. 2013. Scopability and sluicing. *Linguistics and Philosophy* 36:187–223.
- Beck, Sigrid, and Marga Reis. 2018. On the form and interpretation of echo wh-questions. *Journal of Semantics* 35:369–408.
- Bobaljik, Jonathan. 2002. A-chains at the PF-interface: copies and ‘covert’ movement. *Natural Language and Linguistic Theory* 20:197–267.
- Boër, Steven E., and William G. Lycan. 1980. A performadox in truth-conditional semantics. *Linguistic and Philosophy* 4:71–100.
- Bošković, Željko. 2016. What is sent to spell-out is phases, not phasal complements. *Linguistica* 56:25–66.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A Life in Linguistics*, ed. by Michael Kenstowicz, 1–52. Cambridge, Massachusetts: MIT Press.
- Chung, Sandra, William A. Ladusaw, and James McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics* 3:239–282.
- Comyn, Marie. 2013. Wh-in-situ is accompanied by which formal features? Master's thesis, Ghent University.
- Ginzburg, Jonathan, and Ivan Sag. 2001. *Interrogative Investigations. the Form, Meaning, and Use of English Interrogatives*. CSLI Publications.
- Gunlogson, Christine. 2002. Declarative questions. *Proceedings of SALT* 12:144–163.
- Gunlogson, Christine. 2003. *True to Form: Rising and Falling Declaratives as Questions in English*. New York: Routledge.
- Hirsch, Aron. 2017. An Inflexible Semantics for Cross-categorical Operators. Doctoral dissertation, Massachusetts Institute of Technology.
- Huang, C.-T. James. 1982. Logical Relations in Chinese and the Theory of Grammar. Doctoral dissertation, MIT.
- Iwata, Seizi. 2003. Echo questions are interrogatives? Another version of a metarepresentational analysis. *Linguistics and Philosophy* 26:185–204.
- Krifka, Manfred. 2017. Negated polarity questions as denegations of assertions. In *Contrastiveness in Information Structure, Alternatives and Scalar Implicatures*, ed. by Chungmin Lee, Ferenc Kiefer, and Manfred Krifka, 359–398. Springer Cham.
- Lakoff, George. 1970. Linguistics and natural logic. *Synthese* 22:151–271.
- Li, Haoze. 2019. Echo wh-questions: A scope analysis. Talk given at NYU, October 26, 2019.

- Mittwoch, Anita. 1977. How to refer to one's own words: Speech-act modifying adverbials and the Performative Hypothesis. *Journal of Linguistics* 13:177–189.
- Nguyen, An Duy, and Géraldine Legendre. 2020. Covert movement in English probing wh-questions. *Proceedings of the Linguistic Society of America* 5:180–186.
- Noh, Eun-Ju. 1998. Echo questions: Metarepresentation and pragmatic enrichment. *Linguistics and Philosophy* 21:603–628.
- Pesetsky, David. 1987. Wh-in-situ: Movement and unselective binding. *The representation of (in) definiteness* 98:98–129.
- Reinhart, Tanya. 1998. Wh-in-situ in the framework of the Minimalist Program. *Natural Language Semantics* 6:29–56.
- Romero, Maribel. 1998. *Focus and reconstruction effects in wh-phrases*. University of Massachusetts Amherst.
- Ross, John Robert. 1970. On declarative sentences. In *Readings in English Transformational Grammar*, ed. by Roderick A. Jacobs and Peter S. Rosenbaum, 222–272. Waltham: Ginn and Company.
- Sadock, Jerrold. 1974. *Toward a Linguistic Theory of Speech Acts*. New York: Academic Press.
- Sudo, Yasutada. 2007. A metalinguistic semantics for echo questions. *Proceedings of Amsterdam Colloquium* 16:205–210.
- Trinh, Tue. 2024. A note on speech act recursion. *Proceedings of the Olomouc Linguistics Colloquium* 2023:165–175.
- Trinh, Tue, and Itai Bassi. 2023. Excursive questions. *Open Linguistics* 9:20220232.
- Trinh, Tue, and Luka Crnic. 2011. The rise and fall of declaratives. *Proceedings of Sinn und Bedeutung* 15:645–660.

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