Research Article

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Excursive questions

https://doi.org/10.1515/opli-2022-0232
received October 31, 2022; accepted April 3, 2023

Abstract: We present novel observations about types of questions which occur quite frequently in natural discourse but which have so far remained unanalyzed. These are questions about a question act. We then propose an account which derives the observations. Our account relies crucially on the assumption that speech acts are grammatically represented.

Keywords: questions, speech acts, performative hypothesis

1 Introduction

1.1 Sentences and speech acts

Let us start with the familiar distinction between sentences and speech acts. We presuppose the "generative" approach to syntax which has been presented and motivated in several works during the last few decades (Chomsky 1981, 1995, Haegeman 1991, Radford 2004, among others). According to this view, sentences are structured objects generated by rules of syntax and interpreted by rules of phonology and semantics. The phonological rules apply to the "phonetic form" (PF) of a sentence, while the semantic rules apply to its "logical form" (LF). In what follows, we will not be concerned with PF, and we will represent LF in a simplified manner which we believe suffices for the purpose at hand. Consider, for example, the exchange in (1). The LF of the sentences is given below them.

(1) Sentences
A: Did John use the car yesterday?
LF: whether [John_1 used the car yesterday]
B: No he did not.
LF: not [he_1 used the car yesterday]

What about speech acts? These are events that transpire when sentences are used in discourse. In the aforementioned scenario, the acts performed by the utterance of the sentences in (1)-A and (1)-B are, intuitively, those described in (2a) and (2b), respectively.

(2) Speech acts
a. A asks B whether John used the car yesterday
b. B tells A that John did not use the car yesterday

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It is, of course, true that when A utters her sentence, a lot more happens than what is described in (2a): it also happens that A breathes, the earth rotates, etc. These are not part of what we call the "speech act" performed by A. Speech acts, then, are not intended to be all that happens when sentences are uttered in discourse. They are meant to be just those events that constitute "the point" of using the sentence, the essential communicative purpose of the utterance. A more technical term is "illocutionary acts" (Austin 1962). There is a clear sense in which the point of A's producing her sentence is to ask B whether John used the car yesterday. Similarly, B produces her sentence clearly in order to tell A that John did not use the car yesterday.

1.2 The performative hypothesis

Let us note two facts about speech acts. First, they can be described very accurately. Consider the descriptions in (2), for example. The verbs used to name the speech acts in question, i.e., *ask* and *tell*, seem to do their job perfectly. Let us call these verbs "illocutionary verbs." This state of affairs is not obvious. We perform many acts in our everyday life which cannot be named so precisely by a single word. That we have lexical materials for such an exact characterization of speech acts should in fact be considered a puzzle about natural language (Searle 1969). The second fact to note about speech acts is that they seem to relate to the form of the sentence (Katz and Postal 1964, Schiffer 1972, Strawson 1964). Intuitively, the syntactic profile of A's sentence, which is an "interrogative," relates to the fact that it is used to pose question and that of B's sentence, which is a "declarative," to the fact that it is used to make a statement. The terms "interrogative" and "declarative," while intended to be labels of purely formal types, are clearly mnemonic of the use to which sentences of these types are put. In this case, it is to ask (interrogate) and to tell (declare).

The facts just mentioned suggest the possibility that the linguistic system is designed to represent what we have been calling "speech acts." This hypothesis has in fact been made, and it goes by the name of "Performative Hypothesis" (Levinson 1983). What the performative hypothesis (PH) says, essentially, is that what is expressed by the LF of the sentence also contains information about the speaker, the hearer, and the illocution of the utterance (Chomsky 1981, Frege 1879, Krifka 1995, 2001, 2019, 2020, Lakoff 1970, Miyagawa 2022, Ross 1970, Sadock 1974, Sauerland and Yatsushiro 2017, Stenius 1967, Trinh 2022, Trinh and Truckenbrodt 2018, Whitehead and Russell 1910, Wiltschko 2021). Thus, when A asks B whether *p*, the literal meaning of A's sentence is not "whether *p*," but actually "A asks B whether *p*." To illustrate, let us revisit our scenario again. Under the perspective of PH, the LFs would not be as in (1), but would be as in (3).

(3) Sentences
A: Did John use the car yesterday?
LF: A ASKS B [WHETHER [John_1 used the car yesterday]]
B: No he did not.
LF: B TELLS A [NOT [he_1 used the car yesterday]]

As we can see, the LFs of the sentences now mirror the descriptions in (2). What is added, under PH, is the "performative prefixes," i.e., the part about the speaker, the hearer, and the action performed.

(4) A to B: "Did John use the car yesterday?"
LF: $\underbrace{\text{A ASKS B}}_{\text{performative prefix}}$ [WHETHER [John_1 used the car yesterday]]

Note, importantly, that performative prefixes are always silent. We never hear them. However, unembedded sentences are always parsed with them. We can immediately see that linguistic communication under PH becomes quite different from how it was traditionally conceived. There is now, technically, only one speech "act," namely the act of conveying the message which is identified with the literal meaning of the sentence. For example, when A utters the interrogative in (3)-A, she conveys the message that she, A, is asking her hearer, B, whether John used the car yesterday. This message is expressed completely by the LF of (3)-A. And when B

utters her sentence, she is conveying to A the message that she, B, is telling her hearer, A, that John used the car yesterday, and this message is expressed completely by the LF of (3)-B. A consequence of PH is that "speech act theory" would now be factored into the theory of grammar, which investigates the semantics and syntax of such items as ASK and TELL, and the theory of discourse, which investigate how people employ and react to sentences containing them.[1]

What would constitute empirical arguments for PH? Since the performative prefix is, by hypothesis, silent, such arguments would have to be either semantic or syntactic. Semantic evidence would be cases where we find that the interpretation of the sentence cannot be adequately described without reference to the speaker, the hearer, and the illocutionary verb. Syntactic evidence would be cases where dependencies such as those pertaining to argument structure, variable binding, and island hood span across the position which is semantically identified with the performative prefix.

In this article, we argue that PH is correct. In Section 2, we discuss types of questions which occur frequently in discourse but which, to the best of our knowledge, have not received attention in the literature. We show how they constitute semantic and syntactic evidence for PH. In Section 3, we propose an analysis of such questions. Our analysis relies crucially on the assumption that speech acts are represented in the grammar.

2 Arguments for PH

2.1 Semantic evidence

Consider the following exchange between A and B (Schmitt 2021). We will use subscripts to number a discourse participants' utterances. Thus, A_2 is the second utterance made by A, etc.

(5) A_1: Did John use the car yesterday?
B_1: When?
A_2: In the evening
B_2: No. (He only used it in the morning.)

Let us focus on B_1. It is, obviously, a question, which is answered by A_2. What is the meaning of B_1? Clearly, it cannot be the question in (6).

(6) Which time x_i is such that John used the car yesterday at the time x_i

That (6) is not the meaning of B_1 is evidenced by the fact that A_2, which answers B_1, clearly does not mean (7).

(7) John used the car yesterday in the evening

It turns out that the interpretation of B_1, and consequently of A_2 which answers it, can be straightforwardly described when we make reference to the illocutionary acts which are intuitively associated with these utterances. Thus, (8a) and (8b) seem to deliver just the right meaning of B_1 and A_2, respectively.

(8) a. $[[B_1]]$ = Which time x_i is such that A is asking B whether John used the car yesterday at the time x_i
b. $[[A_2]]$ = A is asking B whether John used the car yesterday in the evening

1 A sensible starting point would be, of course, that ASK and TELL are semantically similar to the verbs *ask* and *tell*. However, it should be noted that PH, by itself, makes no commitment regarding this similarity. Specifically, PH allows for syntactic and semantic differences between ask and *ask*, perhaps within certain limits.

Thus, B_1 is most accurately described as a question about a question, or more precisely, about a question act. It represents a sort of excursus in the conversation, a detour that is taken before the conversation gets back on track. We will hence call such questions "excursive questions" (EQs). The question about which an EQ inquires will be called the "antecedent question" (AQ). In the scenario in (5), A_1 is the AQ, while B_1 is the EQ. Note that AQ in this case is a polar question, but AQ can be a wh-question as well, as (9) illustrates.

(9) A_1: When do people eat dinner? = AQ
B_2: Where? = EQ
A_2: In Spain.
B_2: Late at night.

Again, we see that we cannot avoid mentioning the illocutionary act in specifying the interpretation of the EQ and its answer. The utterance *where* in (9) can intuitively be described as asking "which place x_i is such that A is asking B when people eat dinner at the place x_i." Similarly, the answer to the EQ can intuitively be described as saying "A is asking B when people eat dinner in Spain." EQs, therefore, present semantic evidence for PH. Let us now turn to some syntactic evidence.

2.2 Syntactic evidence

2.2.1 Connectivity effects

Consider the contrast in (10). We use the subscripts "T" and "I" to denote "transitive" and "intransitive," respectively.[2]

(10) a. They sank_T the ship using a torpedo
b. #The ship sank_I using a torpedo

The contrast shows that the adverbial *using a torpedo* can co-occur with transitive $sink_\text{T}$ but not with intransitive $sink_\text{I}$. Now, consider the contrast between (11) and (12).

(11) A: Which ship did they sink? = AQ
B: Using what? = EQ
"Which thing x_i is such that A is asking B which ship they sank using the thing x_i"
A: A torpedo.

(12) A: Which ship sank? = AQ
B: #Using what? = EQ
(#"Which thing x_i is such that A is asking B which ship sank using the thing x_i")
A: #A torpedo

We see that the EQ depends on the main verb in the AQ for its acceptability. Moreover, we see that the contrast between (11)-B and (12)-B tracks the contrast between (10a) and (10b): the sentence is acceptable when the verb is transitive, but not acceptable when the verb is intransitive. This is evidence that the phrase **using what**, i.e., the uttered part of the EQ, starts out as an adverbial of a verb which is identical to the verb in the AQ. This is reflected in our paraphrase of the EQ.

Another data point showing connectivity effects similar to those just discussed is the contrast observed between (13) and (14).

2 The examples in (10), (11), and (12) are modeled after an example in the study by Chung et al. (1995) which is used to argue for similar connectivity effects in sluicing constructions.

(13) A: Is John angry?
B: At whom?
"Which person x_i is such that A is asking B whether John is angry at the person x_i"
(14) A: Is John angry?
B: #Who?
("Which person x_i is such that A is asking B whether John is angry at the person x_i")

The adjective **angry** c-selects a PP, not a DP, as evidenced by the contrast between (15a) and (15b).

(15) a. John is angry at Mary
b. #John is angry Mary

This means the contrast between (13) and (14) can be described as due to the pronounced part of EQ being part of a larger structure in whose derivation it starts out as the complement of **angry**. As this dependency crosses the position which expresses the semantic contribution of the performative prefix, we have syntactic evidence for **PH**.

2.2.2 Reconstruction effects

EQs may contain bound variables, as evidenced in (16) and (17).[3]

(16) A: Did every boy$_i$ write a letter? = AQ
B: To which of his$_i$ relatives? = EQ
"Which relation f_j is such that A is asking B whether every boy x_i wrote a letter to $f_j(x_i)$"
A: His$_i$ uncle.
B: No. (Note every boy$_i$ wrote a letter to his$_i$ uncle.)
(17) A: What did every boy$_i$ write? = AQ
B: To which of his$_i$ relatives? = EQ
"Which relation f_j is such that A is asking B what every boy x_i wrote to $f_j(x_i)$"
A: His$_1$ uncle.
B: A letter.

The presence of bound variables in the EQs in (16) and (17) suggests that their derivation involves syntactic movement and reconstruction (Fox 1999, 2000, 2003). Since the base position and the derived position span across the position of the performative prefix, we have syntactic evidence for **PH**.

2.2.3 $\overline{\text{A}}$-dependency effects

EQs seem to exhibit $\overline{\text{A}}$-dependency effects. Specifically, they seem to show unboundedness and island sensitivity (Chomsky 1977, Ross 1967). The first property is exemplified in (18). The wh-phrase *when* can be construed as adverbial of the embedded VP (*use the car*) instead of the matrix VP (*think John used the car*).

(18) A: Do you think John used the car? AQ
B: When? EQ
"Which time x_i is such that A is asking B whether B thinks John used the car at the time x_i"
A: Yesterday.
B: No. (But I think he used it last week.)

3 The EQs in (16) and (17) are functional questions: B is asking to specify a function from boys to their relatives (Engdahl 1986, Heim 2018).

Island sensitivity is evidenced by (19), where the wh-phrase *when* cannot be construed as adverbial of the embedded VP. Note that there is another reading in which the utterance is acceptable, namely that of *when* being adverbial of *like*. This is not the intended reading, which is given below the sentence.

(19) A: Do you like the man who used the car? AQ
B: #When? EQ
("Which time x_i is such that A is asking B whether B likes the man who used the car at the time x_i")
A: #Yesterday.
B: #No. (But I like the man who used the car last week.)

Unboundedness and island sensitivity are hallmarks of syntactic wh-movement. That EQs exhibit these properties is evidence of them undergoing regular syntactic derivation, and since the base and the derived position of the relevant movement span across the position of the performative prefix, we have syntactic evidence for **PH**.

Note, also, that the island sensitivity of EQs also constitutes evidence that they are not instances of eliptical echo questions. In echo questions, the wh-phrase can appear inside an island (Beck and Reis 2018), as evidenced by (20).

(20) A: Does Mary like the man who used the car yesterday?
B: Does Mary like the man who used the car WHEN?

2.2.4 Definiteness effects

A rather puzzling fact about EQs is that they must relate to definite noun phrases and cannot relate to indefinites. Consider the contrast between (21) and (22).

(21) A: Did John read the book? = AQ
B: Which book? = EQ
"Which book x_i is such that A is asking B whether John read the book x_i"
A: Barriers.
B: No.

(22) A: Did John read a book? = AQ
B: #Which book? = EQ
("Which book x_i is such that A is asking B whether John read the book x_i")
A: #Barriers
B: #No

The initial reaction to this contrast might be to appeal to pragmatics. Thus, an explanation for the deviance of the EQ in (22) might be given along the following line. The AQ, i.e., A's question in the beginning, is a polar question which would be fully answered by just "yes" or "no." Thus, the subsequent EQ, which inquires after the identity of the book John read, would be, in some way, a violation of the Gricean Maxim of Relation, as the answer it demands would be a proposition which is more informative than the positive answer to AQ (Grice 1967).[4]

There are two problems with this explanation. First, it would not really distinguish (22) from (21), as the AQ in (21) is also a polar question which would be completely answered with just "yes" or "no."[5] The second problem is that we would expect B's answer in (23) to be as deviant as the EQ in (22), because it would be a

4 Because if John read Barriers than he read a book but not *vice versa*.
5 The same holds for all the cases which we previously considered where the AQ is a polar question.

violation of Relation in the same sense: it is more informative than the positive answer to the question under discussion. But clearly B's answer in (23) is not as deviant as the EQ in (22).[6]

(23) A: Did John read a book?
B: He read Barriers.

We would note that the definiteness effect can be considered evidence that EQs are not instances of sluicing, as the which-phrase in sluicing constructions can relate to an indefinite noun phrase, as illustrated in (24) (Chung et al. 1995, Ross 1969).

(24) John read a book, but I don't know which book

3 Analysis

3.1 Deriving the LF of EQs

The starting point of our analysis is the claim that HP is correct: sentences may contain performative prefixes. Moreover, we will allow the grammar to append such prefixes recursively. This means a structure such as (25) is, in principle, well-formed.

(25) A ASK B [WHETHER [B ASK A [WHETHER [John used the car yesterday]]]]

The sentences in (1), repeated below in (26), can now be ascribed to the following LFs.[7]

(26) A: Did John use the car yesterday?
A ASK B [WHETHER [John used the car yesterday]]
B: When?
B ASK A [which$_i$ time [A ASK B WHETHER [John used the car yesterday at the$_i$ time]]

Let us go into more detail about how LFs such as that in (26)-B are generated and interpreted. First, we assume that wh-phrases are underlying of the form *which NP*, where *NP* is *time* in the case of *when*, *thing* in the case of *what*, *person* in the case of *who*, etc. Second, we assume that determiners, which include *which* and *the*, come with indices (Hackl 2019). The index on the determiner is interpreted as an appositive of the complement NP.

(27) a. [[which$_i$ NP]] = "which NP x_i (is such that)"
b. [['the NP]] = "the NP x_i"

The interpretation of the EQ in (26) would then be (28).

(28) B is asking A which time x_i is such that A is asking B whether John used the car yesterday at the time x_i

As we can see, this interpretation amounts to a description of the speech act event that transpires when B utters the EQ. Under the perspective of PH, this is precisely the meaning of the EQ (as uttered by B).

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6 Another explanation might go like this. The definite – **the book** in the AQ in (21) – presupposes the existence of a book familiar to both A and B (Heim 1982, 1991, Karttunen 1976). It then makes sense to ask which book it is, as a way of challenging this presupposition. On the contrary, the indefinite – **a book** in the AQ in (22) – does not come with this presupposition. Therefore, it makes no sense to ask the EQ. Thus, the contrast between (21) and (22) comes down to the semantic difference between definites and indefinites. We believe this explanation is based on the right intuition. In Section 3.2, we propose a syntactic account of the definiteness effect which, we believe, can be ultimately reduced to this same intuition. See Note 11.

7 The reader might ask why we have the expressions *which$_i$ time* and *the$_i$ time* in the LF of (26)-B. The reason will be clear presently.

But how is this LF constructed? Here is our crucial claim about the derivation of EQ.

(29) Derivation of EQ
EQ is derived from AQ by syntactic rules

This means EQs are derived as any sentence is, except that the input must be the structure of AQ. What are the "syntactic rules"? One of them is, of course, merge. This is the operation which maps two expressions α and β to the expression containing α and β as immediate constituents. We will assume that merge is subject to only one constraint: one of its arguments must be unembedded. Thus, we allow for movement and adjunction to non-matrix nodes. Let us now see how the LF in (26)-B is derived. By hypothesis, we start with the AQ, which is (30).

(30) [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_\alpha$ John used the car yesterday]]]

We then merge α with *at which$_i$ time*, which has been constructed independently in the derivational workspace. This operation extends α to α', resulting in (31).

(31) [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_{\alpha'}$ [$_\alpha$ John used the car yesterday] at which$_i$ time]]]

Next, we merge *which$_i$ time* with γ, extending it to δ, as shown in (32). As γ contains *which$_i$ time* as one of its subconstituents, this is a case of wh-movement, resulting in *which$_i$ time* occupying two different positions in the same tree. We indicate the lower position, i.e., the "trace," with angled brackets.

(32) [$_\delta$ which$_i$ time [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_{\alpha'}$ John used the car yesterday at <which$_i$ time>]]]]

What follows is an incremental merge of ask, A, and B to yield ε.

(33) [$_\varepsilon$ B ASK A [$_\delta$ which$_i$ time [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_{\alpha'}$ John used the car yesterday at <which$_i$ time>]]]]]

The final step involves a rule which is not merged. This is Fox's 2003 rule of Trace Conversion (TC) which applies to lower copies of wh-movement and changes *which$_i$* to *the$_i$*. Note that this means lower copies must be interpreted as definites (Fox 2003, Sauerland 2004).

(34) Trace conversion (TC)
<which$_i$ NP> $\rightarrow$ the$_i$ NP

Applying TC to (33) results in (35), which is our target LF.[8]

(35) [$_\varepsilon$ B ASK A [$_\delta$ which$_i$ time [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_{\alpha'}$ John used the car yesterday at the$_i$ time]]]]]

A question which needs to be addressed at this point is whether the step from (31) to (32) violates any locality constraint. This step involves movement of *which$_i$ time* from inside α' to γ.

(36) [$_\delta$ which$_i$ time [$_\gamma$ A ASK B [$_\beta$ WHETHER [$_{\alpha'}$ John used the car yesterday at <which$_i$ time>]]]]

As the movement crosses the wh-expression WHETHER, the objection might be raised that it violates the Wh-Island Constraint (Ross 1967). However, note that this constraint ended up being derivable from Chomsky's theory of bounding nodes (Chomsky 1981, 1986a). The two propositions we need from this theory are the following two.

(37) Bounding theory
a. NP and TP are bounding nodes
b. Each step of movement may cross at most one bounding node

8 PF would be derived by deleting γ and spelling out *which$_i$ time* as *when*.

Standard cases of Wh-Island Constraint violations turn out to be cases in which a step of movement crosses two bounding nodes. An example is given in (38a). The theory also explains the Complex NP Island Constraint, as illustrated in (38b).[9] The relevant bounding nodes are framed and the offending movement indicated with dashed instead of solid arrows.

(38) a. [$_{CP}$ What do [$_{\boxed{TP}}$ you wonder [$_{CP}$ whether [$_{\boxed{TP}}$ John bought <what>]]]]

b. [$_{CP}$ What do [$_{\boxed{TP}}$ you believe [$_{DP}$ the [$_{\boxed{NP}}$ story [$_{CP}$ <what> that [$_{\boxed{TP}}$ John bought <what>]]]]]

Now, let us say that performative prefixes are not tensed. Specifically, they extend the CP domain, but do not introduce any new TP. Then, there will be no problem with the movement in (36). For clarity, we reproduce (36) in (39), with the Greek letters replaced by category labels.

(39) [$_{CP}$ which$_i$ time [$_{CP}$ A ASK B [$_{CP}$ WHETHER [$_{\boxed{TP}}$ John used the car yesterday at <which$_i$ time>]]]]

As we can see, the movement crosses a single bounding node.

3.2 Explaining the observations

It is clear from the discussion above that the LFs which we derive for EQs deliver the intuitively correct interpretation of these expressions. It should also be clear how we would explain the connectivity effects (Section 2.2.1), the reconstruction effects (Section 2.2.2), and the $\overline{\text{A}}$-dependency effects (Section 2.2.3).[10] These effects all reduce to properties of wh-questions, which is what we take EQs to be. We leave it to the reader to verify this.

There remain the definiteness effects discussed in Section 2.2.4. Recall the relevant contrast, reproduced below in (40) and (41).

(40) A: Did John read the book?
B: Which book?

(41) A: Did John read a book?
B: #Which book?

It turns out that the contrast follows straightforwardly from (29); i.e., the claim that EQ is derived from AQ by syntactic rules. Let us first consider how the EQ in (40) is derived. The starting point, by hypothesis, is the AQ, which is (42).

(42) [$_\alpha$ A ASK B WHETHER John read the$_i$ book]

Next, we merge *which$_i$ book* to α, extending it to β, as shown in (43).

(43) [$_\beta$ which$_i$ book [$_\alpha$ A ASK B WHETHER John read the$_i$ book]]

Note, at this point, that we have not performed any movement operation. The step from (42) to (43) is an external merge, not an internal merge. Nevertheless, the output is the same as that which would result from movement and TC: we end up with *which$_i$ book* in the operator position and *the$_i$ book* at the base position. The

9 We assume that intermediate traces are not semantically interpreted.

10 An account of the reconstruction effects, specifically the data points in (16) and (17), requires some additional assumptions about how the restrictor of wh-determiners are interpreted. We believe these can be made appropriately without affecting the argument we are making.

subsequent steps are those of merging A, B, and ASK to yield (44), which delivers the intuitively correct meaning.

(44) [$_\gamma$ B ASK A [$_\beta$ which$_i$ book [$_\alpha$ A ASK B WHETHER John read the$_i$ book]]]
Meaning: "B is asking A which x_i is such that A is asking B whether John read the book x_i"

Now, let us turn to the deviant EQ in (41). It is intended to mean the same as the non-deviant EQ in (40). Thus, we want to derive for it the same LF as that in (44). Can we? The answer is no. Given the claim in 3.1, the derivation would have to start from the AQ in (41), which is (45).

(45) [$_\alpha$ A ASK B WHETHER John read a$_i$ book]

Subsequent steps of the merge will then give us (46).

(46) [$_\gamma$ B ASK A [$_\beta$ which$_i$ book [$_\alpha$ A ASK B WHETHER John read a$_i$ book]]]

The problem with this structure is that there is nothing in it which could be interpreted as the trace of *which$_i$ book*. Traces must be definite, and *a$_i$ book* is not definite. Thus, *which$_i$ book* would be a vacuous quantifier, which is something not tolerated in natural language grammar (Chomsky 1986b). Can we change *a$_i$ book* into *the$_i$ book*? The answer is no. There is simply no syntactic rule which can bring about this change. Note that TC would not do the job, because TC applies to traces (lower copies), and *a$_i$ book* is not a trace.[11]

This account of the definiteness effect extends to cases of implicit argument also. Consider (47).

(47) A: Did John eat?
B: #What?
("Which thing x_i is such that A is asking B whether John ate the thing x_i")

The deviance of the EQ in (47) would be explained if we make the standard assumption that the implicit argument of **eat** is an indefinite ("something"), but not a definite (Chomsky 1981).

4 Conclusion and open issues

EQs are questions about question acts. Thus, performative prefixes are needed for an accurate description of their meaning. Furthermore, our analysis shows that these prefixes occur between two syntactically related positions, namely a wh-operator and its trace. Thus, we have provided an empirical argument for the PH which says that speech acts are represented in the grammar.

There are of course several open issues which cannot be addressed within this note, given its limited scope. We will just briefly mention some of them here.

The first concerns the nature of sentences. Under PH, every sentence will describe the illocutionary act which is performed when the sentence is uttered. This means that every sentence will be true. A saying *it is raining* to B does not make it true that it is raining, but does make it true that A tells B that it is raining. According to PH, A's sentence literally means "A tells B that it is raining." What happens, then, is that A utters a sentence whose literal meaning is a contingent proposition which becomes true by virtue of the sentence being uttered. Is this a problem for PH? We do not think so. It is well known that natural language contains sentences which are verified by their utterance. These include, of course, the so-called "performatives," but also

11 Note that there is a question as to why traces are interpreted as definites, not indefinites. Suppose this fact is ultimately explained in terms of the semantics of definites and indefinites. Then, our syntactic explanation of the definiteness effect in terms of the form of traces would amount to a semantic explanation of this effect in terms of the meaning of definites and indefinites. See Note 6.

sentences whose subject is first person singular and whose predicate is, say, *speak,* or *think*.[12] If PH is true, then every unembedded sentence which is uttered is of this kind. This is a coherent position, as some have pointed out (Hedenius 1963, Lemmon 1962).

This brings us to the second issue. It concerns an argument against PH which, we believe, is considered to be decisive (Gazdar 1979, Levinson 1983). The argument relates to the claim that every sentence is made true by its utterance and says, basically, that this claim is false. We will call this the "non-equivalence argument." The essence of it can be illustrated very simply and clearly by the sentences in (48).

(48) a. It is raining
b. I am telling you that it is raining

Here is the argument: If PH is true, (48a) and (48b) should be semantically equivalent, but (48a) and (48b) are obviously not semantically equivalent. The first sentence describes the weather. The second one describes the speaker. Hence, PH is untenable.

Our response to this argument starts by noting a very important point: what we call PH in this article is actually not the hypothesis which was called PH in the 70s and which was the target of the non-equivalence argument. According to the "original" PH, which we will call PH-1, (48a) is syntactically derived from (48b) by phonological deletion of the performative prefix. Significantly, this deletion step is "meaning preserving," just as every transformation was claimed to be. This means that (48a) and (48b) are identical as far as their semantically interpreted structure is concerned. Thus, PH-1 would represent (48a) and (48b) as (49a) and (49b), with ~~strikethrough~~ representing phonological emptiness.

(49) Structure of (48a) and (48b) according to PH-1
a. ~~I am telling you that~~ it is raining
b. I am telling you that it is raining

We believe proponents of PH-1 were never able to develop an adequate response to the non-equivalence argument. Now what about the version of PH we are proposing here? Let us call it PH-2. Assuming A is the speaker and B is the hearer, PH-2 would say that (48a) and (48b) have the structures in (50a) and (50b), respectively. Again, ~~strikethrough~~ indicates phonological emptiness.[13]

(50) Structure of (48a) and (48b) according PH-2
a. ~~A TELL B~~ it is raining
b. ~~A TELL B~~ I_A am telling you_B it is raining

Thus, PH-2 predicts that (48a) and (48b) have different meanings. The first sentence says A is telling B something about the weather. The second says A is telling B something about A. We believe this difference can be the basis for an adequate response to the non-equivalence argument and hope to explicate this response, as well as the response to several other criticisms against grammatically represented performative prefixes, on another occasion.

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12 Note that the sentence *I am speaking* is verified only by me speaking it, not by me dreaming that I'm speaking it. The sentence *I am thinking* is verified in both scenarios, assuming speaking is "sound production accompanied by an act of imagination," as Aristotle characterized it. This difference between *speak* and *think* does not affect the claim that both will result in a contingent sentence being made true by utterance when the subject is first person singular.

13 The reader might have noticed that the performative prefix of PH-1 contains the pronouns "I" and "you" while the performative prefix of PH-2 contains the proper names of the speaker and the hearer. It is a curious fact about many languages that speaker and hearer must be referred to by pronouns and not by names. The proponents of PH-1 seemed to have taken this fact as obvious when they presented their analysis of the logical forms of sentences. There is, however, nothing obvious about this fact, and many languages do indeed allow reference to speaker and hearer by name. The performative prefixes we postulate in this note do not contain first and second person pronouns, but instead contain the names of the speaker and the hearer. We refer the reader to the studies by Trinh (2022), Trinh and Truckenbrodt (2018) for an explanation of the fact that first and second pronouns are obligatory in terms of the presence of the names in the performative prefix.

A crucial assumption of PH-2 is that the performative prefix is never morphologically overt. Note that this assumption does not require us to say that pronunciation has no bearing on interpretation. It has been pointed out that intonational contours have systematic semantic effects (Bartels 1997, 1999, Gunlogson 2003, Truckenbrodt 2012, among others). There is, also, a correlation between illocution and word order, in that ask triggers T-to-C movement in the prejacent while assert does not. Thus, matrix interrogatives exhibit subject auxiliary inversion, while matrix declaratives do not. Our view about the morphological "non-realization" of the performative prefix does not conflict with these observations in any way. What we mean is only the morphemes contained in performative prefixes are never lexicalized as phonological words. The question, of course, is why. At this point, we have no satisfactory answer, and neither can we provide a reason for the curious pronunciation pattern of EQs. Specifically, we do not know why the only overt element in EQ is the wh-phrase. We hope to address this question in future research.

Acknowledgement: The first author, Tue Trinh, is supported by the European Research Council (ERC), Grant number 787929 "Speech Acts in Grammar and Discourse" (SPAGAD), and the National Foundation for Science and Technology (NAFOSTED) of Vietnam, Grant number 602.02-2021.06. The second author, Itai Bassi, is supported by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program, Grant number 856421. We thank audiences at the Workshop on Non-Canonical Questions, in Tartu, Estonia, as well as audiences at the Leibniz-Zentrum Allgemeine Sprachwissenschaft for valuable discussion. All errors are our own.

Conflict of interest: The authors, Tue Trinh and Itai Bassi, have no conflict of interest to declare.

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