

WH-in-situ in WH-raising languages – pragmatics has what↑
to do with that?

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0. Introduction

This squib will be an examination of exclusively English data in which WH-phrases do not raise, despite a syntactic environment where WH-phrases should obligatorily raise. English is described as a WH-raising language. If a WH-phrase exists in a sentence, at least one WH-phrase must raise. This is true of standard questions (1), embedded questions (2), and in relative clause constructions (3).

- (1) a. What did Bill buy ~~what~~
 ^ _____|
- b. Who ~~who~~ bought what
 ^ ____|
- (2) a. Mary wondered what Bill bought ~~what~~
 ^ _____|
- b. Mary wondered who ~~who~~ bought what
 ^ ____|
- (3) Mary talked to the man who I met yesterday ~~who~~
 ^ _____|

The one exception to this generalization, widely accepted in the literature, is echo questions (henceforth ECHO-Qs), as in (4).

- (4) A: Mary ate a skunk
 B: Mary ate **WHAT**↑¹

This exception is explained as permissible because of the non-interrogative use of echo questions. Yet, new data that I introduce here along with the ECHO-Q data suggest that this explanation is insufficient. The new data all share one characteristic in common – a wh-phrase in-situ. I will show that these expressions do indeed request information, and that it is incorrect to classify them as non-interrogative. Further, I will show that the licit use of these expressions data is sensitive to Common Ground (CG), in the sense of Stalnaker (1978). This squib will set as its primary goal to present the data and its characteristics, since it is diverse and has largely not been previously discussed in the literature. The data strongly suggest that intonational contour of the question or of the WH-phrase itself interacts with what kind of information is being requested.

1. Five kinds of WH-in-situ expressions

¹ Capital letters and boldface indicate focal stress here.

1.1 Describing the different kinds of questions

In this section, I will describe five different kinds of questions, and give evidence that these five kinds are distinct from one another. As we just saw in (4) in §0., ECHO-Qs allow wh-in-situ. Since these are the most commonly discussed data wh-in-situ data in the literature, the new data I will present in this section are often mistaken for ECHO-Qs. In order to avoid this mistake, let's start with a scenario: Lucy works at a bakery, baking all sorts of sweet desserts all day. She has just come home after a hard day's work. She is telling her friend Mona about the day.

- (5) Lucy: What a long day I've had! It was as if there was no end to all the things I had to do.
 Mona: What did you do today?

Let's imagine some different things that Lucy could answer, and what response on Mona's part would be licit:

- (6) Lucy: I made little chicken pastries today
 Mona: You made **WHAT**↑ today? ECHO-Q
- (7) Lucy: I made xxxx today
 Mona: You made what↑ today? REF-Q
- (8) Lucy: I sold those strange concoctions
 Mona: You sold what↑↓ strange concoctions↓? REF2-Q
 H*-L L-L%
- (9) Lucy: I made desserts today
 Mona: You made what kind of desserts today? SPEC+ Q

Lucy's assertion in (6) would be surprising to Mona because chicken pastries are not desserts. Mona could respond to Lucy's surprising information with the ECHO-Q. The wh-phrase receives focal stress and rising intonation. Note that the same information could have been conveyed even if the wh-phrase had raised, as in (10). As we will see (in §1.2), all of the types of WH-in-situ questions have "raised-WH expression" counterparts that could be used to convey the same information as the WH-in-situ option.

- (10) Mona: **WHAT**↑ did you make today?

Similar to ECHO-Qs are REF(erence) questions (henceforth REF-Qs) (Ginzberg & Sag, 2001). An example of a REF-Q is Mona's response to Lucy in (7). REF-Qs are characterized by the rising intonation of the WH-phrase, and by immediately overt utterance of the referent of the WH-phrase. In (7), this immediate prior referent is the mumbled words represented by xxxx. Two more examples of REF-Qs are in (11)-(12):

- (11) A: We went to see Hamlet last night
B: You went to see Hamlet with who↑↓ ?
- (12) A: Sam, Bill, and Tom all helped me move in my new apartment. You know, I like him
so much
B: You like who↑↓ so much↓ ?

In both (11) and (12), a pronoun is used (*we* and *him*, respectively) whose antecedent is not clear. They are REF-Qs because the pronoun serves as the immediate prior referent and the WH-phrase receives rising intonation². Ginzberg & Sag (2001) classify REF-Qs as a subclass of ECHO-Qs. This is based on the identity of word order in ECHO-Qs and REF-Qs, and on the similar rising intonation on the WH-phrase. However, the rest of the data in (8)-(10) may convolute this conclusion. First, there is another kind of WH-in-situ question that seems remarkably like REF-Qs in usage, but with a different intonation contour. In (8), Lucy has referred to *those strange concoctions*, and mistakenly believes this is part of the CG. Mona signals this mistake by the rise-fall intonation she gives to the WH-phrase, followed by a falling intonation for the rest of the expression. Like REF-Qs then, the WH-phrase has an immediate prior referent in the discourse. Yet the intonation on the WH-phrase is different from ECHO-Qs. If this datum is taken to be an instance of REF-Q, it is unclear whether REF-Qs are a subclass of ECHO-Qs. Since this classification is unclear, I will suspend judgment and call these kinds of questions REF2-Qs.

Let's consider (9). As was set up in our scenario, it is part of the CG of this discourse that Lucy works in a bakery and makes desserts all day. Since this is part of the CG, Lucy's response could be taken to be uncooperative, since it is uninformative to Mona. But, Mona must respond to this comment or else the discourse will fall flat on its face. It is reasonable that Mona would signal to Lucy that she wanted more specific information about what Lucy did all day long. I call this kind of question SPEC+ Q, meaning that speaker B is looking for more specific information than what has already been given. Another clearer example of SPEC+ Q is (13). Imagine that in (13), B is interviewing A.

- (13) A: My name is Mary Smith
B: And your full name is what?

B's utterance in (13) could be uttered with several different intonation contours that, just as standard WH-questions can have many different intonation contours. It does not appear to be characteristic of SPEC+ Qs that the WH-phrase is characterized by a specific intonation or stress. Rather, the expression as a whole appears to have the identical intonation contour of its "raised-WH counterparts", as in (14):

- (14) A: My name is Mary Smith
B: What is your full name?

Now let's change the scenario a bit to see another usage of wh-in-situ questions. Imagine Mona is not Lucy's friend, but rather is the district manager that needs to get the bakery's quotas for the day. Both Lucy and Mona know that the goal of the discourse is for Mona to ask questions and for Lucy to answer them. They have the dialogue in (15).

² The rise-fall intonation on the WH-phrase in (11) and (12) is treated as a type of rising intonation for these purposes.

- (15) Lucy: I made many different desserts.
Mona: So, you made how many cookies EXPECT-Q

I label Mona's question EXPECT-Q, meaning that this type of question is used in situations where questioning is expected. In this context, several things are noteworthy. First, the intonation contour of EXPECT-Qs is like SPEC+ Qs – the WH-phrase is not characterized by a specific intonation or stress, but rather the expression as a whole appears to have the identical intonation contour of its "raised-WH counterpart." Secondly, no immediate discourse referent is necessary, unlike ECHO-Qs, REF-Qs, and REF2-Qs. (16)-(18) are more examples of EXPECT-Qs, (18) in particular demonstrating that the expectation can be habitual and not necessarily expressed linguistically.

(16) an interview (i.e., a credit application, or similar information gathering task)

- a. Interviewer: Date of birth?
b. Applicant: January 1, 1965
c. Interviewer: And you were born where? EXPECT-Q
d. Applicant: Pleasant Valley
e. Interviewer: Pleasant Valley is in what state? EXPECT-Q
f. Applicant: Ohio
g. Interviewer: Where do you live now?
h. Applicant: Toledo, Ohio
i. Interviewer: And you have lived there for how long? EXPECT-Q

(17) a deposition or court testimony

An attorney and defendant can have the following dialogue:

- a. Attorney: Tell me what happened on January 1, 2005 at 4 pm
b. Defendant: I was driving along Andrews Avenue.
c. Attorney: And you were driving which direction? EXPECT-Q
d. Defendant: I was headed south, towards the library.
e. Attorney: And you were traveling about how fast would you say? EXPECT-Q
f. Defendant: 35 miles per hour
g. Attorney: OK, and then what happened?
h. Defendant: I came upon a stop sign and stopped quickly.
i. Attorney: (writing this down) OK, you came to a stop sign and EXPECT-Q
stopped quickly why?
j. Defendant: Because I saw someone crossing in the crosswalk.

(18) a. Susan, a 7th grader, comes to her mother every morning asking for money before school. Without opening her mouth, she comes to her mother on Tuesday morning and holds out her hand. Her mother replies,

- b. And you need how much money today↓ ? EXPECT-Q

1.2 WH-in-situ versus WH-raising

Now that we have seen examples of all these types of WH-in-situ questions and have begun to distinguish them, it is appropriate to show that in a context where WH-in-situ is used, a standard question (one in which a WH-phrase has raised) is always able to be used. The evidence is below in (19)-(23):

- | | | |
|------|---|--------------------|
| (19) | Lucy: I made little chicken pastries today | |
| | Mona: You made WHAT ↑ today? | ECHO-Q |
| | Mona: WHAT ↑ did you make today? | Raised WH ECHO |
| (20) | Lucy: I made xxxx today | |
| | Mona: You made what↑ today? | REF-Q |
| | Mona: What↑ did you make today? | Raised WH REF-Q |
| (21) | Lucy: I sold those strange concoctions | |
| | Mona: You sold what↑↓ strange concoctions↓ ? | REF2-Q |
| | Mona: What↑↓ strange concoctions↓ did you sell? | Raised WH REF2-Q |
| (22) | Lucy: I made desserts today | |
| | Mona: You made what kind of desserts today? | SPEC+ Q |
| | Mona: What kind of desserts did you make today? | Raised WH SPEC+ Q |
| (23) | Lucy: I made many different desserts. | |
| | Mona: So, you made how many cookies? | EXPECT-Q |
| | Mona: So, how many cookies did you make? | Raised WH EXPECT-Q |

However, WH-in-situ is not available anywhere that a standard question is. Most importantly, WH-in-situ questions can never be uttered “out of the blue” (i.e., discourse initially). If any of (24)-(28) were uttered as two friends greeted each other after five years of not speaking, the utterance would not be felicitous.

- (24) # You made **WHAT**↑ today?
 (25) # You made what↑ today?
 (26) # You sold what↑↓ strange concoctions↓ ?
 (27) # You made what kind of desserts today?
 (28) # So, you made how many cookies?

It may seem that the exchange between Susan and her mother in (z) demonstrated that an EXPECT-Q can occur discourse initially. But crucially, Susan holds out her hands, a non-linguistic dialogue starter that signals to her mother that their habitual morning conversation has begun.

1.3 Summary of §1

We have described five different kinds of WH-in-situ questions. We have discovered that WH-in-situ questions are much more vast than what has been described in the data – ECHO-Qs and REF-Qs. There are also REF2-Qs, SPEC+ Qs, and EXPECT-Qs. All five of these types of questions hold in common that they may not be uttered “out of the blue.” Also, anywhere that a WH-in-situ question can be used, a corresponding standard question (i.e., one in which the WH-phrase has raised) can be used. We also have described the intonation patterns that each kind of question is characterized by. ECHO-Qs, REF-Qs and REF2-Qs all have a specific intonation pattern associated with the WH-phrase. SPEC+ Qs and EXPECT-Qs have intonation contour that is almost identical to that of their WH-raised counterpart.

2. Putting it together – do the descriptions of this data lead us anywhere?

2.1 These WH-in-situ questions are requesting what?

In this section, I will provide summary of what information each kind of WH-in-situ question is intuitively requesting. As will become apparent, there is a contrast between the interpretation of the request being derived from the compositional semantics versus it being derived from the pragmatics.

The semantic value of a question is the set of possible answers to that question paired with their truth value (this is attributable I think to Groenendijk & Stokhof, or to Hamblin, though I don't have the papers available at this time). For instance in (29), the possible answers and their respective truth values to the standard question in (29)a are given in (29)b. Only one answer will return a truth value of 1 (Simon & Garfunkel). But the important point is that to understand the question is to know the set of possible answers that should be considered.

- (29) a. Who recorded *Bridge Over Troubled Water*?
b. {Simon & Garfunkel, 1), (Peter Paul & Mary, 0) , (Dan Forgarty, 0)}

However, to know what the set of possible answers to a question is, a speaker must know what the information requested by the question is. Unlike the standard question in (29)a with a very straightforward set of possible answers, WH-in-situ questions are not a straightforward in the information they request.

ECHO-Qs have been considered to be non-interrogative. I challenge that view here, and say that ECHO-Qs request that the assertion just put forth be reasserted. An ECHO-Q is not licit in a context where the previous assertion was not surprising or shocking. The pragmatic use of ECHO-Qs is to signal to one's interlocutor that the information they gave was shocking and unexpected. Speaker A was mistaken to assert it in the context and to assume that that assertion could be easily added to the CG. Speaker B communicates this by use of the ECHO-Q. The semantic value of an ECHO-Q must be determined by the discourse; more specifically, it must be determined by the most recent utterance, as in (30)-(31). The possible answers to the ECHO-Q that make up the semantic value of the ECHO-Q are pairs of constituents and truth values. For instance, in (30), speaker B utters **WHAT** ↑, indicating that they are questioning the validity of the constituent *an octopus* in the previous utterance. The only possible answers to this ECHO-Q are pairs of the constituent *an octopus*, and truth values. This set of pairs makes up the semantic interpretation of an ECHO-Q, such as (30)B, as seen in (31).

- (30) A: I ate an octopus
B: You ate **WHAT** ↑?

- (31) | You ate **WHAT** ↑| = {(an **octopus**,1), (an octopus, 0)}

Similarly, the semantic interpretation of REF-Qs and REF2-Qs is closely tied to the recent discourse, and are sensitive to CG. REF-Qs and REF2-Qs serve as a way for Speaker B to signal to speaker A that a mismatch in what was understood to be CG has occurred; in practical terms, Speaker B is saying, 'you assumed something was in our CG that is not.' The information requested is what that an ambiguous assertion be made unambiguous by assigning an index to a referent. Take example (12) repeated here as (32) as an example.

- (32) A: Sam, Bill, and Tom all helped me move in my new apartment. You know, I like him
so much
B: You like who↑↓ so much↓ ?
- (33) | You like who↑↓ so much↓| = {(Sam,0), (Bill, 1), (Tom, 0)}

SPEC+ Qs and EXPECT-Qs function a bit differently though. They are not being used by Speaker B to signal any kind of violation of what is in the CG. Rather, they are asking for information that was not in the CG originally, and that was not previously asserted in the discourse. In the case of SPEC+ Qs, the information requested is more specific details about some assertion already made. EXPECT-Qs function very similarly to standard questions, requesting information that is relevant to the context, but about which no prior assertion may have been made. As we will see next in §2.2, this may not be coincidental. SPEC+ Qs and EXPECT-Qs can be grouped together in two other ways that distinguish them from the other WH-in-situ questions – lack of unique intonation on the WH-phrase and lack of an immediate prior discourse referent.

2.2 Correlation between intonation contour, information request, and antecedent of WH-phrase

I now turn to drawing a distinction between two classes of WH-in-situ questions. I argue here that ECHO-Qs, REF-Qs and REF2-Qs form one class, while SPEC+ Qs and EXPECT-Qs form another.

ECHO-Qs, REF-Qs, and REF2-Qs function pragmatically to allow a speaker to signal to their interlocutor that a violation in what the CG is or what it is asserted to be has occurred. SPEC+ Qs and EXPECT-Qs do not function to let a Speaker say anything pragmatically about the CG. As it turns out, the intonation contour of the expression and the requirement of an immediate discourse referent also divide these two classes of WH-in-situ questions.

In §1.1, the intonation of each WH-in-situ question was characterized. ECHO-Qs, REF-Qs, and REF2-Qs have a specific intonation on the WH-phrase, one that occurs on this constituent even if the WH-phrase has raised, as in the “Raised-WH counterparts” (see (19)-(21)). But, the intonation contour of SPEC+ Qs and EXPECT-Qs is not a consequence of the position of the WH-phrase. Rather, the “Raised-WH counterpart” of SPEC+ Qs and EXPECT-Qs has a very similar intonation contour as the WH-in-situ expression.

Lastly, ECHO-Qs, REF-Qs and REF2-Qs require an immediate prior discourse referent; SPEC+ Qs and EXPECT-Qs do not. In fact, EXPECT-Qs appear to be resistant to having any overt discourse referent.

These correlations present themselves as ready data for further inquiry.

3. Conclusion

This squib has reviewed, for the first time in the literature, a broad class of WH-in-situ questions in English. Unlike the traditional view, I reject the hypothesis that ECHO-Qs are non-interrogative. Rather, I consider that WH-in-situ questions in English request information. Their use is made licit by the discourse context. I outlined five distinct types of WH-in-situ questions and labeled them ECHO-Qs, REF-Qs, REF2-Qs, SPEC+ Qs, and EXPECT-Qs. Further, I argued that these five types form two natural classes - ECHO-Qs, REF-Qs, REF2-Qs in one, and SPEC+

Qs, and EXPECT-Qs in the other. These classes were postulated due to the correlation between +/- intonation on the WH-phrase, +/- pragmatic use to signal something about CG violations, and +/- requirement of an immediate prior discourse referent. Further work in this data will explore why these classes exist and how they can be accounted for formally and compositionally.

4. Appendix

Summary of the characteristics of WH-in-situ questions

One generalization drawn from this chart – None of the wh-in-situ options can be uttered “out of the blue”

	REF-Qs	REF2-Qs (Non-anaphoric REF-Qs)	SPEC+ Qs – (“full name”)	ECHO-Qs	EXPECT-Qs
What does it request?	What the unique referent of a pronoun is	Requests a lot more than the true answer to the WH-phrase – asks for information about that which was presupposed to be common ground info. See “context info”	More specific information that what was made available and already provided earlier in the discourse	To confirm that the assertion of the previous utterance is true.	The true answer to the wh-question.
Is the information requested via the compositional semantics?	Yes	No	Yes	No	Yes
Is referent of WH-phrase overt? In the context? Common Ground?	Referent is either not in the discourse, or referent is unknown/ambiguous.	Referent must be part of the prior linguistic discourse	Some less specific version of the referent must be present in the immediately preceding utterance.	Referent MUST be in the prior discourse. In fact, in the immediately preceding utterance.	This is difficult. That a referent exists must be part of the Common Ground. An overt antecedent is disallowed, I *think*.
Can we say anything about context/comm	Speaker A assumes that the referent of	B is saying to A, our common	A and B do not share the same	B is saying to A, you thought that that	A and B’s common ground

on ground?	the non-specific pronoun is common ground between he and B.	ground is not what you think it is. The constituent corresponding to the WH-phrase shouldn't exist in our world if what I think is our common ground is indeed our common ground. So, update me!	understanding about how much information is appropriate in this questioning context.	information would be ok to introduce into our discourse, and it is wild! I have to signal this is to you, and maybe even ask you to confirm that you really did say as wild and unexpected of a thing as I think you did.	includes the question. B needs details about the specifics of the request.
Intonation on WH	↑	↑↓	?? – the intonation on the WH is not important – the entire sentence get intonational stress like a wh-question. So in sentence final position, you get a falling stress – L-L%	↑ - plus focus/stress on the wh-phrase	?? – not important - the intonational stress pattern of the entire sentence conveys the attitude of the speaker towards the request
Could WH-have raised?	Yes	Yes	Yes	Yes	Yes
If WH raises, do this change the intonation on the WH or the contour of the sentence?	The intonation on the WH-phrase remains the same. ↑↓	The intonation on the WH-phrase remains the same. ↑↓	The contour of the sentence remains the same, regardless of where the WH-phrase occurs	The intonation on the WH-phrase remains the same. ↑ - plus focus/stress on the wh-phrase	The contour of the sentence remains the same, regardless of where the WH-phrase occurs.
Status of referent	Required	Required	Context needs to include a less specific semantically related antecedent, like name:full name	Required	Overt antecedent in the discourse is weird.

5. References:

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