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[Olga Kellert](#) *

Posted Date: 12 June 2024

doi: 10.20944/preprints202406.0815.v1

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Article

Wh-in Situ in Islands. A Semantic analysis Based on Corpus Data

Olga Kellert

Seminar f. Romanische Philologie, University Göttingen, Humboldtallee 19, D-37073 Göttingen;
olga.kellert@phil.uni-goettingen.de

Abstract: This paper deals with wh-in situ elements (i.e. wh-elements that stay in the argument position) in islands such as adverbial clauses, conditionals, relative clauses, complement clauses, etc. extracted from corpora of Italian and Spanish. I will show that there are two types of wh-in situ embedded inside an island in these languages. One type is a real genuine question. Another type is an echo question. There are several approaches that convincingly account for the insensitivity of echo questions to islands. The genuine question type is still a puzzle for semantic and syntactic approaches. It turns out that wh-in situ questions with a genuine question interpretation are only possible inside islands that are not marked for sentence type and do not contain any operator that could block the question interpretation of the wh-in situ. This way question alternatives can be passed higher up the clause until they meet a question operator in the matrix clause that interprets them. Consequently, the question is well-formed and interpreted without any problem. Real islands contain semantic operators or quantifiers that interpret question alternatives triggered by wh-in situ until they reach the question morpheme to be interpreted as question alternatives. The result is that the derivation crashes.

Keywords: wh-in situ; islands; formal semantics; questions

1. Introduction

Reinhart's (1997) seminal work on wh-in situ in questions in English brought to light the observation that wh-elements can stay in the argument position in any clause in English, even in islands.¹ Although an *if*-clause is considered to be an island (cf. Ross 1967), the wh-element can stay in the argument position in English:

(1) Who will be offended if we invite which philosopher?

Max will be offended if we invite Prof. Green.

Reinhart (1997) assumes that movement cannot cross islands, therefore the wh-element in situ does not move in (1) and that it must be interpreted in situ. The same point has been made for wh-in situ in complex nominal phrases or determiner phrases (NP/DP) which are assumed to be the strongest islands in the literature (cf. Baker 1970, Dayal 2006, among others). These authors assume that wh-elements in situ have the same interpretation as if they moved above the complex NP/DP. Assuming that wh-elements are interpreted as existential quantifiers in classical approaches to

¹ Islands are domains, which do not permit certain dependencies, e.g. wh-element and its licensor, i.e. the question operator or the dependency between the trace and its antecedent. Some well known islands observed by Ross (1967:76) are complex NPs and adverbial clauses. The following examples show an impossible configuration between traces (t) and its antecedent:

i. Complex NPs: *This kid, I must call [the teacher who punished t] ii. Adverbial phrases: *Which book did you suggest a movie to John [after reading t]

question interpretation (in line with Hamblin 1973, Karttunen 1977 (henceforth H&K)), they should have scope above the complex DP island and bind the variable within this complex DP/NP (cf. Dayal 2006):

(2) Who knows a man who wrote which book?

$\lambda p \exists x \exists y [\text{person}(x) \ \& \ \text{book}(y) \ \& \ p = \exists z [\text{man}(z) \ \& \ \text{wrote}(z,y) \ \& \ \text{knows}(x,z)]]$

{Bill knows a man who wrote Aspects, Sue knows a man who wrote Aspects, Bill knows a man who wrote LGB, Sue knows a man who wrote LGB}

Due to the possibility of interpretation of the wh-in situ inside the complex NP/DP, some linguists have concluded that an alternative account to LF-movement of classical approaches such as H&K is necessary (cf. Reinhart 1997, Krifka 2001, Dayal 2006). One such approach has been suggested within the alternative semantics (Kratzer & Shimoyama 2002, Beck 2006, among others). The following introduction into alternative semantics is based on Fălăuș 2014.

On this approach, the semantics of wh-elements involves the consideration of alternative semantic values. The theory is developed in a bidimensional semantics (cf. Rooth 1985), where alternatives are introduced and computed separately from regular or ordinary semantic values. The starting point is the interpretation of a sentence such as the following:

(3) A: Who came to the party? B: Paul and Sue.

This utterance conveys that Paul and Sue are the only individuals in the context for which a certain property holds, a meaning that goes beyond what is literally said. There are two components leading to this enriched, non-literal interpretation: (i) a set of alternatives (e.g. other contextually relevant individuals) and (ii) the exclusion of the (non-entailed) alternatives. This strengthened meaning, i.e. the one obtained via the consideration and exclusion of alternatives, is often triggered by focus.

Wh-elements of different sorts (wh-based question pronouns like *what*, wh-based indefinites like *whatever*) and non-wh-based Polarity Items (Free Choice Items like *any*) also activate alternatives. A phrase such as *any student* activates domain alternatives, i.e. subsets of (contextually relevant) students. Indefinites (i.e. existentially quantified elements) systematically activate sets of alternatives which expand (compositionally) until they find an operator that selects them. The alternatives created by the indefinite can then be 'distributed over' the set of accessible worlds. Alternatives can be of different types (e.g. individual, propositional) and as a consequence are accessible to both sentential and non-sentential (generalized) quantificational operators, which eventually determine the interpretation of the indefinite. Individual alternatives can expand and give rise to alternatives of a higher type, e.g. propositional alternatives, which then get caught by a sentential operator $\exists p$ or $\forall p$, such as the ones in (1) (see Kratzer & Shimoyama 2002, Chierchia 2004, among others):

(i.) Indefinites in alternative semantics after Kratzer and Shimoyama 2002:8

For $[[\alpha]]_{w,g} \subseteq D_{\langle s,t \rangle}$:

a. $[[\alpha]^{w,g} \lambda w'. \exists p p \in \alpha]]^{w,g}$ and $p(w') = 1$

b. $[[\alpha]^{w,g} \lambda w'. \forall p p \in \alpha]]^{w,g} \rightarrow p(w') = 1$

The contribution of the indefinite remains constant, i.e. to provide a set of alternatives. Its different readings being the result of associating with different operators.

When a set of propositional alternatives combines with the existential operator defined in (a), it yields the proposition that is true in case at least one alternative in the relevant set is true. The universal quantifier defined in (b) yields the proposition that is true in case every alternative in the relevant set is true.

The difference between wh-elements in questions and free choice indefinites is that the latter always combine with the universal operator $\forall p$ in modal contexts (i.e. under modal verbs), whereas wh-elements in questions usually combine with the existential operator that is located on sentence level (so called Q-operator).

The main aim of this article is to evaluate both question semantics on the empirical observations based on statistically verified frequency distribution of *wh-in situ* questions in two Romance languages: Italian and Spanish.

The article is structured as follows. Section 2 presents the empirical observation of *wh-in situ* and *wh-ex situ* in these two languages, especially with respect to the distribution of *wh-elements* inside islands and suggests a semantic typology of the distribution observed in this section.

Section 3 introduces certain accounts to *wh-in situ* inside islands that deal with echo questions.

Section 4 suggests how to implement certain restrictions on overgeneralization of the alternative semantic approach on question interpretation inside islands. Section 5 concludes.

2. Empirical observations on *wh-in situ* in Italian and Spanish

In this section, I will present corpus data, which attest *wh-in situ* cases in islands and discuss the syntax and the interpretation of these sentences. Before looking at *wh-in situ* questions in islands (2.2) and their interpretations (2.3), I will look at them in a nonisland environment, i.e. in root sentences (2.1).

2.1. *Wh-in Situ in Root Sentences*

Romance languages differ with respect to the placement of the question pronoun in root interrogatives.

French interrogatives allow *wh-in situ* in root sentences (cf. Behnstedt 1973, Obenauer 1994:300, Mathieu 2004, among others):

(4) Tu fais quoi dans la vie?

you do what in the life

‘What do you do (for a living)?’

Wh-in situ in French can be uttered in out-of-the-blue contexts (i.e. they do not need to refer to some contextually salient utterance expressed previously in the discourse) (see Mathieu 2004, but see Cheng 1995 for a different view). Imagine a context where A didn’t see B for ages and utters (4) without presupposing that B has a job. B could answer indeed that he has none (cf. Mathieu 2004). French has *wh-ex situ* questions as well which can be uttered in the same context:

(5) Qu’est-ce que tu fais dans la vie?

what est-ce que you do in the life

‘What do you do (for a living)?’

Other Romance Languages like Italian and Spanish usually use the *wh-ex situ* strategy uttered by the person A in a question communication described above in (5) *What are you doing for living?*:

(6) a. A: (Che) cosa fai nella vita? B: Studio. ‘I’m studying’(It.)

b. A: ¿Qué haces como trabajo? B: Soy medico. ‘I’m a doctor.’(Sp.)

All Romance languages mentioned above can use *wh-in situ* in questions to ask to repeat what has been said previously in the discourse, so called Echo Questions (EQs), or at least one type of EQs to which I will return later in section 3 (see Reis 1992, Poschmann 2015, Beck & Reis 2018, among others and Bolinger (1957) for a more fine grained typology of repetition questions):

- (7) A: Sto faccendo una pizza. B: Faccendo COSA?² (It.)
‘A: I’m preparing a pizza? Preparing WHAT?’
- (8) A: Estoy haciendo este video B. Estás haciendo QUÉ (Sp.) ‘I am doing this video. You are doing WHAT?’

The observation described above (i.e. wh-ex situ question is a default question type in Spanish and Italian and wh-in situ is primarily used in special (pragmatic) contexts such as one type of EQs) is confirmed by the frequency of wh-in situ and wh-ex situ in these languages: the occurrence of wh-in situ is significantly lower in comparison to wh-exsitu questions in written corpora of Spanish and Italian (around 3 % in Spanish and around 6% in Italian wh-interrogatives). There is a significant relationship between the two variables. Wh-ex situ is more likely than wh-in situ to appear in Spanish and Italian, $X^2(1, N = 87.8448), p < .01.$:

Table 1. wh-in situ vs. wh-ex situ in root interrogatives in written corpora of Sp. and It. ³

	Wh-in situ	Wh-ex situ	Total
Sp. ESCOW2011	63	1.904	1967
It. CORIS	71	450	521
Total	134	2354	2488

To sum up: French wh-in situ root questions behave differently with respect to Spanish and Italian, because they can appear in out-of-the-blue contexts. In Spanish and Italian, wh-in situ is usually used in special pragmatic contexts such as repetition questions or EQs in root interrogatives. The question is how we should describe the difference between wh-in situ and wh-ex situ questions in Italian and Spanish. Wh-in situ questions are somehow integrated into the previous discourse, i.e. they are discourse salient. The integration into the discourse has been already observed in the literature on EQs (cf. Dumitrescu 1990, Reis 1992/2011, Poschmann 2013, Beck & Reis 2018, among others):

“Pragmatically speaking EQs always are associated to a discourse in which the speaker asks about something, the answer to which has already been given in the previous discourse.” (Reis 2011)

If wh-in situ questions are discourse salient, they should not be allowed in *out of the blue*-contexts which introduce a new discourse. The introduction of a new discourse is expressed through greetings or topic change words (e.g. sp. *Hola* ‘Hello’). This assumption is confirmed by the following data from acceptability judgements of Spanish speakers (see also Biezma 2018, Pires & Taylor 2007, among others for the impossibility to use wh-in situ questions in *out of the blue*-contexts in Spanish):

- (9) a. A: ¿Hola qué tal ? Qué haces? Sp. (+ out of the blue)
‘Hello, how are you?’ ‘What are you doing?’

² Following the convention in the literature, I will represent the wh-element with an echo-interpretation with capital letters.

³ I used the search query lemma=*hacer* ‘do’ + *qué* ‘what’ and *qué* ‘what’ + lemma=*hacer* ‘do’ in the Spanish corpus and the same search query in the Italian corpus.

- b. A: ¿Hola qué tal? *Haces QUÉ? (+out of the blue)

‘Hello, how are you?’ ‘You do what?’

- c. A: Hago un sandwich. B: ¿Haces QUÉ? (- non out of the blue)

‘I make a sandwich. You make what?’

To summarize so far: wh-in situ questions in Italian and Spanish must be integrated in the previous discourse. One possibility to describe this connection to the discourse was suggested by Biezma 2018 who analysed wh-in situ questions as questions under discussions (QUDs) (see Roberts 1996). The basic idea behind QUPs is that each sentence in discourse gives an answer to a QUD or it brings up another question that can help to answer that QUD. Wh-in situ questions in Spanish have the function of a follow up question on the on-going discourse (see Biezma 2018). In this description, a specification question is by definition a QUD as specification requires some statement in the discourse that the speaker asks to specify.

Another property of wh-ex situ questions is that they can appear with all kinds of adverbial or nominal modification of interrogative pronouns (e.g. *who else*, *who of you*, *who the hell*, *who if not*). These modifiers can restrict the domain of the wh-element to a certain set of individuals or they enlarge/widen the domain to all possible individuals. The latter case has been dubbed in the literature as non-Discourse-linked questions (non D-linked) (see Pesetsky 1987, Den Dikken & Giannakidou 2002, among others). The crucial observation is that non-D-linked questions usually correlate with wh-ex situ as the following minimal pair questions show in Spanish and Italian (see *ibid.* for English):

- (10) *¿Que de todos los alimentos que tomamos son más necesarios y saludables?*

‘What of all the ingredients that we use are the most necessary and healthy?’

- (11) *¿A quién otro si no a el te estás refiriendo?*

‘To whom else if not to him are you referring?’

- (12) *¿Qué más puedo hacer?*

‘What else can I do?’

It is impossible to use wh-in situ with wh-modification if these modifiers are not already part of the previous utterance (see Reis 2011 for this observation in German):

- (13) *¿Te estás refiriendo a QUIEN (*otro si no a el)?*

‘You are referring to WHOM (*else if not to him)?’

- (14) *¿Son más necesarios y saludables QUE (*de todos los alimentos que tomamos)?*

‘Are the most necessary and healthy WHAT (*of all ingredients that we use)?’

Similar observations can be made in Italian:

- (15) *A chi posso chiedere se non a te?* ‘Whom else can I ask if not you’

- (16) *Posso chiedere a chi (*se non a te)?*

‘I can ask WHOM (*if not you)?’

Out-of-the blue questions can be considered one type of non-D-linked questions as there is no obvious domain restriction of the wh-element and the domain of the wh-element can be described as wide as possible:

- (17) Out of the blue context: A to B that A met for the first time:

What are you doing for living?

Wh-elements in out of the blue contexts or with modification that widens the domain of the wh-element as in 10-12, have a similar property as unspecific indefinites such as Sp. *cualquiera*/It. *chiunque* (lit. 'whatever/whoever') (see Chierchia 2004 on domain widening of polarity items).

(18) *Cualquiera puede hacerlo./ Chiunque può farlo.* 'Anybody can do it.'

The domain of unspecific indefinites is usually wide in comparison to specific indefinites such as e.g. there is **someone** at the door. **He** is very young. Unspecific indefinites trigger universal quantification over the domain alternatives, i.e. in (18) the universal inference is: For every person it is possible that this person does it (see Chierchia 2004, among others).

Based on this generalization of wh-in situ in Spanish and Italian in root interrogatives, one could already predict that the same generalization should apply in non-root interrogatives such as embedded interrogatives or interrogatives with different types of islands, e.g. wh-in situ inside relative clauses, if-clauses, etc. The generalization thus is the following. If wh-in situ appears at all inside islands in Spanish and Italian, it should be discourse given. More crucially is the prediction that wh-in situ inside islands does not have the question interpretation of wh-ex situ elements that appear in out-of-the blue contexts (i.e. non-D-linked questions).

I will now test whether wh-in situ exist in islands in Spanish and Italian and if so, whether wh-in situ elements respect the generalization observed in root interrogatives:

(19) Prediction for wh-in situ in islands: wh in situ does not appear in out of the blue contexts or with wh-modification that widens the domain of wh-elements as wide as possible (classical non-D-linked questions).

2.2. Wh-in Situ in Islands in Corpora

In order to test whether wh-in situ can occur in islands and the prediction in (19), I selected different types of islands (cf. Ross 1967) and checked their existence in spoken and written corpora of Spanish and Italian.⁴

The following examples illustrate different types of islands that were investigated:

- Adverbial clauses introduced by prepositions selecting an infinitive clause

(20) Context: a political debate: [CORALimedts03] (It.)

A: Questi sono i dati da cui bisogna partire// per cercare che cosa?⁵

We need to start from these data // to look for what

Di favorire una ricomposizione tra nord e sud (...)

'to favor a compensation between north and south.'

(21) A: Quien hace la Guerra? Para conseguir qué? (Sp.) (ESCOW2011)

'Who is responsible for the war? To achieve what?'

- If-clauses

(22) Malaussene, se accetta. Se accetto cosa? [CORIS NARRATTrRo] (It)

⁴ I am aware that a corpus method is not sufficient to test interpretations of linguistic data. Future experiments are needed in order to verify the observations.

⁵ The representation of EQs in capitals is omitted, because it is not clear yet if these questions are EQs. Instead, I underlined the wh-word for the reader for simplicity.

‘A: If you accept. B: If I accept what?’

- (23) A: Le pregunté si habia oido eso. B: ¿Si habia oido qué? [ESCOW2011] (Sp.) ‘A: I asked him if he has heard of it? B: If he has heard what?’

A: Si habia oido que el otro día vinieron a preguntar por él.

‘A: If he has heard that the other day someone came to ask for him.’

- Wh-islands

- (24) A: Ben, dimmi come si fa. B: Come si fa cosa? A: Vaffanculo, sai benissimo

‘A: Ok, tell me how to do it. B: How to do what? A: Fuck you, you know well.’

[CORIS NARRATTrRo] (It)

- (25) A: e non piangere e fare delle scenate quando muore [...] . (It) do not cry and make a scene when he dies.

B: Oh, ma che è ? ! Quando muore chi? [CORIS NARRATTrRo] (It)
when dies who

‘Oh, but what is it? When who dies?’

- (26) ¿ por que lo diga quien? [ESCOW2011] (Sp)

for what it say[subj.] who

‘Because WHO says it?’

- Complement clauses introduced by the complementizer *che/que* ‘that’

- (27) A: Non dirai sul serio ...B: che continuiamo cosa ? A: Questo nostro tormentarci ‘A: Don’t tell me sincerely. B: that we continue to do what? A: Our struggling’

[CORIS NARRATTrRo] (It)

- (28) Que no lo haces por coquetería. ¿ Que no lo hago por QUÉ? [ESCOW2011]

‘A: That you don’t do it to flirt. B: That I don’t do for WHAT?

‘that I don’t do it why?’

- Complex DPs/NPs (= relative clauses introduced by the complementizer *che/que*)

- (29) Quella che segue cosa ? [CORIS_MON2001_04] (It)

‘The one that follows WHAT?’

- (30) ¿Las chicas que jugaban qué? [ESCOW2011] (Sp) the girls that played what

‘The girls that played WHAT?’

In order to evaluate the frequency of wh-in situ in islands, i.e. whether wh-in situ inside islands occurs statistically less often than wh-ex-situ outside islands, one needs to make reference to a wh-ex situ variant. However, such a variant is simply not existent, as whex situ is simply ungrammatical outside islands or inside islands in the ex-situ position (see also section 1 for English):

- (31) ¿*Qué_i han hecho las chicas que jugaban t_j? (Sp.) what have done the girls that played

‘* What_i did the girls that played t_j?’

- (32) *Cosa_i dimmi se accetta t_j? (It)

what tell me if she accepts?

(33) * Dimmi se cosa_i accetta t_i? (It)

tell me if what she accepts?

If we take as a reference for a comparison a grammatical wh-ex situ construction of a similar complexity (out of embedded bridge verbs), wh-in situ inside islands (embedded interrogative) can be described as less frequent than the matrix variant:

(34) Cosa pensi che Verb? 44 occ.

What do you think Verb ?

(35) se Verb cosa? 1 occ.

if Verb what?

This comparison confirms partially the observation made in previous section, namely that wh-in situ requires special contexts to appear. That is why the frequency distribution is lower than the wh-ex situ variant.

Let us now turn to the frequency distribution of the islands.

The majority of wh-in situ in islands in the written Italian corpus are adverbial sentences such as (20) (introduced by ital. *per/a/di* ‘for/to’) (150 occ.(urrences)), only 9 occ. are if-islands and wh-islands. A similar observation holds for Spanish. However, the distribution in the Table 2 did not give a statistically significant result. The chisquare statistic is 2.1298. The p-value is .14446. Not significant at $p < .05$.

Table 2. wh-in situ in different islands in written corpora of Sp. and It.

	Wh-in situ inside whislands	Wh-in situ inside adverbial sentences	Total
Sp. ESCOW2011	15	133	148
It. CORIS	9	150	159
Total	24	283	307

The difference in frequency (although not statistically significant) seems to suggest that a more fine grained description of islands is needed in order to account for the distribution of wh-in situ in Table 2.

As I will suggest later on, the islands make up two groups. One group contains a Qmorpheme inside islands, another one does not:

(36) C° *chel/que* ‘that’ [-Q]

(37) C° *se/si* ‘if’ [+Q]

This distinction will also explain wh-ex situ outside embedded clauses, i.e. only embedded clauses that do not contain any Q-morpheme allow wh-movement:

(38) Cosa_i pensi che [-Q] accetterà t_i?

‘What do you think will she accept?’

(39) *Cosa_i (non) sai se [+Q] accetterà t_i?

‘What do you know/don’t you know if she will accept?’

As we will see this grouping (embedded clause with or without Q) has some interpretational effects (see section 4.2 for details of this difference).

2.3. Interpretation of *wh-in situ* in islands

As the generalization from the study on *wh-in situ* in root interrogatives (19) predicts, we should expect a restricted interpretation of *wh-in situ* inside islands as in root interrogatives. It is expected to find *wh-in situ* in islands with a restricted quantificational domain. I will test this prediction on corpus data.

One common use of *wh-in situ* in islands in the given corpus data is to ask the addressee to repeat the utterance which I already described as one type of EQs in 2.1. The crucial observation is that the answer to the *wh*-question pronoun *cosa* is **explicitly** given in the immediate discourse (i.e. in the sentence mentioned right before the question) and the answer is a definite element *quello che...* ‘the one that...’.^{6 7}

(40) A: spero che non ti dispiaccia quello che sto per fare (It.)

A: ‘I hope that you are not upset with what I am doing?’

B: che non mi dispiaccia che cosa?

B: ‘that I am not upset with what?’ [CORIS NARRATTrRo]

The following *wh-in situ* question in (41) is not EQ as described above in (40). The *wh-in situ* does not refer to an explicitly given definite description in the immediate discourse (see also Pires and Taylor 2007, Biezma 2018, among others, for this observation in Spanish *wh-in situ*). Instead, the *wh-in situ* refers to an **implicit** argument and this argument has the form of an **indefinite** such as *something, someone*. The speaker of this type of question asks to specify the implicit verbal argument mentioned previously in the discourse (henceforth specificational use of *wh-in situ* or SpecifQ) (see Escandell 2010 for other possible readings of *wh-in situ* in Spanish and Fiengo 2007 for English):

(41) B: Non lo so. Non sono stato io. (It.)

‘I don’t know. It wasn’t me.’

A: Non sei stato tu a fare che?

A: ‘It wasn’t you to do what?’

B: A fare quello che lei...

B: ‘To do what she ...’[CORIS NARRATTrRo]

Let us see some Spanish examples of this type SpecifQ. The *wh-in situ* refers to an argument inside an implicit suggestion, which is derivable from B’s explicit suggestion, since to talk to somebody entails the proposition to tell something to somebody:

(42) A: ¿Y qué quieres que haga? – B: Que hables con él. – A: Para decirle qué? (Sp.)

‘A: And what do you want me to do? B: That you speak with him. A: To tell her what?’

⁶ Note that EQs ask for repetitions, but they do not necessarily repeat the whole utterance, because pronoun features may change from first person to second person singular as in (36) (see Poschmann 2015 for this point).

⁷ It is tempting to define EQs as D(iscourse)-linked questions in the sense of Pesetsky 1987, Comorovski 1996. However, prototypical D-linked questions are built with *wh*-phrases, EQs are not: A: I met a girl. B: You met WHO? B: # You met WHICH GIRL? I thus prefer to distinguish Discourse Givenness of EQs from D-linking of questions.

In the following discourse the wh-element *qué* ‘what’ inside an adverbial clause does not refer to a previously mentioned argument. However, the wh-in situ refers to an implicit proposition of the previous utterance, namely that Rocito did something when he won last year:

(43) MIG: sabes cuánto ha ganado el ano pasado Rocito? (Sp.)

‘Do you know when he won last year Rocito’

ROS: haciendo qué?

‘Doing what?’

PAT: saliendo diez minutos en la tele todos los días

‘Being for 10 minutes on television every day’

PAT: cincuenta y cuatro millones de pesetas [CORAL Efamcv01]

‘54 Millions Pesetas.’

There are discourse situations in which the speaker anticipates the question of the hearer. This type of questions is often used in reports and it can be paraphrased as ‘you might wonder....’:

(44) Context: political discussion [CORAL imedts03] (It.)

A: Questi sono i dati da cui bisogna partire//

These are the data of which must go

‘These are the data from which we must start//

per cercare che cosa?

‘to look for what (you might wonder)’

Di favorire una ricomposizione tra nord e sud (...)

‘to favor une recompensation between North and South.’

I categorize this type of wh-in-situ-questions as one kind of self-addressed questions to which the speaker already knows the answer as can be demonstrated by the answer the speaker herself gives to her question and her comment on it that the answer is ‘obvious’ (see Carston 1996, Caponigro & Sprouse 2007 on this type of questions):

(45) A: Partiamo per andare dove? A: Roma, ovvio.

‘We leave in order to go where? To Rome, it’s obvious. ’

Given these types of questions, I can formulate the typology of wh-in situ inside islands on the basis of the corpus data as follows. The interpretation of wh-in situ inside whislands/if-islands has the interpretation of EQ, i.e. the question pronoun refers to an *explicit* definite description or some other element in the immediate previously mentioned discourse. The interpretation of wh-in situ inside non-wh-islands cooccurs with specificational use of questions which have the function to specify some *implicit* argument in form of an indefinite or the wh-in situ cooccurs in a self-addressed question to which the speaker herself already knows the answer:

Table 3. question interpretation of wh- in situ inside islands in the corpus data⁸.

	Wh/if-islands	Non-wh/if-islands
--	---------------	-------------------

⁸ - corresponds to not found, + corresponds to found in the data.

wh- in situ refers to an element in the immediate discourse	+	+
wh-in situ refers to an element in speaker's mind (one type of self-addressed questions)	-	+
wh-in situ refers to an implicit argument of the indefinite form <i>some</i>	-	+

I can thus summarize the observations about wh-in situ in islands in Spanish and Italian. They are either used to ask the addressee to repeat her utterance (EQ) or to specify an argument which has not been uttered overtly in the previous discourse but is entailed in an implicit proposition derivable from what is said in the previous discourse (SpecifQ). Both question types are somehow connected to the discourse. The prediction in (19) is thus empirically borne out. I will now return to the theoretical analysis of the wh-in situ in the literature as briefly sketched in section 1 and evaluate different approaches based on empirical findings.

But before that, I will introduce into basic facts about EQs and their analysis as they are special in the sense that wh-in situ is interpretable as EQ inside wh-islands/if-islands.

3. EQs

In this section I will show in line with the literature (see Reis 1992, Sudo 2007, Reis & Beck 2018, among others) that EQs do not need to be licensed and therefore they do not present any problem for question interpretation of *wh*-in situ inside any type of island.

3.1. Properties of EQs

According to Reis (1992/2011), an EQ “always conveys an additional interpretive effect, which is that the speaker reopens a gap in a proposition that both speaker and hearer know has already been closed – the ‘echo’ effect.” (Reis 2011):

(46) A: I live in Wadabudu. B: You live WHERE? (EQ)

EQs undergo very little restrictions, i.e. wh-in situ with echo-like interpretation can appear everywhere, in every sentence type (e.g. imperatives) and even in islands (i.e. they are sentence type and island insensitive) (cf. Reis 1992, Sudo 2007 and section 2):

(47) a. Erklär ihm WAS?(/)

‘Explain him WHAT?’

b. Ob er WEM kündigt?(/)

whether he who(dat) fires

'if he fires WHO?'

EQs are not embeddable as complements under question predicates as ordinary questions are (cf. also Sudo 2007):

(48) A: Who ate my cake?

B: # I don't know who ate WHAT. (EQ).⁹

⁹ However, *wh*-in situ questions can appear with question predicates in a paratactic relation:

i. "Great! Jesus Christ, we did it!" "Did what, may I ask?" [URL:

<https://www.fanfiction.net/s/9934555/1/Highschool-Ambassador>

B': I don't know who ate it.

EQs are still used as questions because they ask the addressee for an answer. EQs are not marked as questions morpho-syntactically in the languages mentioned below, i.e. they do not appear with subject-verb-inversion, question particles *est-ce que* and *-li* in (49)-(51) (cf. also Reis 1992 for German, but see Artstein 2002, Sudo 2007, Sobin 2010, Chernova 2012/2015 for apparently syntactic marking of EQs in Spanish and Japanese):

(49) As-tu fait cela/*QUOI? French

have-you made this/WHAT

'Have you done it?'

(50) Est-ce que tu as fait cela/*quoi? French

est-ce que you have made it/*WHAT

'Have you done it?'

(51) Ty -li kupil eto/*ČTO? Russian

you -li bought this/*WHAT

'Have you bought it?'

EQs do not allow a pair list reading as answers if only one wh-element is focused or if it refers to only one element which needs to be repeated:

(52) Chi ha fatto cosa? (It.) (Non echo question)

'Who did what? Mary did this, Peter did that.' (√ pair-list reading)

(53) A: Chi ha fatto questo? B: Chi ha fatto COSA? (echo question)

'Who did WHAT? # Mary did this, Peter did that.' (# pair-list reading)

As mentioned by a Spanish native speaker, the lack of pair list readings in EQs has to do with the choice of the context. According to her, it is just needed to create the right context. For instance, a context in which the speaker did not hear both arguments and asks to repeat them:¹⁰

(54) A: Yesterday at the party there was a high fight. _ killed _ _ killed _...

B: Sorry, I heard a noise right when you mentioned the names. Can you repeat them please!

WHO killed WHOM? (pair list reading)

A: Sure! Mary killed Bill. Tom killed Ben. (pair list in EQs)

I thus assume that the pair list reading is not a clear feature for distinguishing EQs from regular questions and needs further empirical investigation with speakers.

Note, that the question in i. is a SpecifQ, not a EQ. It asks for a specification of (pronominal) reference (Wachowicz 1974). I thank Radek Šimík for pointing this out to me.

¹⁰ According to the judgement of a native speaker, at least the single pair reading is possible in EQs in Spanish: i. A: El filibustero compró carcamusasoides. the strange-word bought strange-word

'The filibustero bought carcamusasoides.' B: QUIÉN compró QUÉ?

‘WHO bought WHAT?’

A: Juan (filibustero es su mote) compró chucherías (aquí también las llamamos carcamusasoides).

‘John (his nickname is filibustero) bought trinkets (we call them carcamusoides around here).’

The wh-in situ element must not preserve a certain order with respect to other whelements. If the subject wh-constituent *chi* ‘who’ follows the adverbial wh-element *come* ‘how’ as in (56), it can only be interpreted as an echo question there (so called *Superiority violations*) in contrast to the wh-question in (55) where the subject whelement precedes the adverbial wh-element and has a pair list-reading:

(55) Chi si chiama come? Lei si chiama Maria. Lui si chiama Marco,... who
refl.pro calls how

‘Who is who? Her name is Maria, His name is Marco.’

(56) A: Come si chiama chi? ¹¹
how refl.pro calls who
‘Who is who?’

B: who is Mario.

To summarize: EQs are never allowed in out-of-the-blue contexts. They violate Superiority Effects. They are not embeddable under question predicates as wh-ex situ questions are. Genuine/regular questions are sentence type sensitive, they appear in declaratives or declarative-like questions, i.e. questions whose answers are propositions. Pair-list answers and superiority violations do not seem to be solid distinguishing features between EQs and regular questions.

Table 4. differences between EQs and genuine questions.

	Pair list	Sentence type Insensitive	Superiority violations	Answers are not propositions
EQs	+/?	+	+	+
regular questions	+	-	?	-

3.2. EQs as Questions of a Special Kind

I assume an approach of EQs as questions of a special kind (see Beck & Reis 2018). In other approaches, EQs are not analysed as questions (Sudo 2007, Poschmann 2015):

- i. (echo) Clauses in EQs form convey the impression that the wh-expression marks a gap the discourse participants know has been closed before.
- ii. The set of alternatives evoked by wh-part focusing is:{question, deictic/anaphoric propositional counterpart}.

Accordingly, the context of the EQs provides the non-question alternative (highlighted in bold) in iii:

- iii. The set of alternatives evoked by wh-part focusing is:{question, **deictic/anaphoric propositional counterpart**}.

¹¹ According to a native speaker of Spanish, it is possible to have the reverse order as a regular question despite superiority.

“Context: Imagine that you are in charge of writing name-tags for presenters in a conference. A large group of people, all unknown to you, arrives at the same time. Their names are told to you so you can write it down as their fee was collected. You don’t pay attention to who is who (you are writing) and now you have to distribute all the nametags you finished. You can now utter i. addressed at your colleague so she can help you out to find out to whom you need to hand out what tag. This is a Specification question and it violates superiority:

- i. you: ¿Cómo se llama
quién? how cl.3.sg
call.3.sg who ‘When
who called?’ “

They assume that “the meaning of a question (its semantics) is a set of alternative propositions (the answers to the question). Evoking such a set of alternatives pragmatically sets up a choice situation. A ‘standard’ discourse interpretation is a request to identify true vs. false alternatives. The appropriate response then is to state the true alternative(s) in the set. This is derived here compositionally by making the *wh*-expression the alternative trigger and the Q operator responsible for lifting the resulting meaning to the level of ordinary semantics.” (Beck & Reis 2018)

I won’t reproduce the formal account in detail (see Beck & Reis for details). Briefly, questions denote alternatives on the level of ordinary meaning:

(57) [CP Q [IP Tim bought what]]

= λw . Tim bought x in $w \mid x$ is Element of D

The difference to non-EQs is that the structure of EQs does not contain a clausal Q operator (Beck & Reis 2018). But for the *wh*-phrase to be interpretable, there has to be a Q-operator, and in the case of EwhQs, it is a phrasal Q (the presence of which can be related to *wh*-focus). What makes an ordinary *wh*-phrase syntactically an operator is thus absent in EQs, deriving their non-operator status. At the same time, phrasal Q allows them to derive the question semantics of EQs. On ordinary semantic level EQs are like normal questions as in (57):

(58) [CP Q [IP Tim bought what]]

= λw . Tim bought x in $w \mid x$ is Element of D } ordinary semantic level

However, on the focus semantic level they denote a *unique alternative*. The echo *wh*-element denotes the unique relevant entity in D and this unique entity is provided by the previously mentioned discourse.

(59) [CP Q [IP Tim bought what]]

= λw . Tim bought x in $w \mid x$ is a unique element of D } alternative semantic level

= {Tim bought that}

This analysis of EQs explains the absence of intervention effects in EQs as follows. (60)

a. *[Q ... [only/nobody [... *wh*...]]] canonical *wh*-question

b.ok :[only/nobody [Q [*wh*]] ...] echo-*wh*-question

“In (60) (a), the sister of ‘only’/‘nobody’, has an undefined ordinary semantic value because *wh* has an undefined ordinary semantics. Before Q can come to the rescue, this leads to undefinedness when focus is evaluated at that point. This problem does not arise in (60)(b), the structure we propose for EwhQs: the ordinary semantics of the sister of ‘only’/‘nobody’ is well-defined because Q has

already worked its miracle of shifting the alternative semantics to the level of ordinary meaning. Hence no intervention effect is predicted in EwhQs.” (Beck & Reis 2018).

4. My Analysis of Non EQs inside Islands

I will show that alternative semantic approaches are too flexible as they overgenerate alternatives across the board, i.e. in any island. In order to account for the island differences and restrictions in an alternative semantic approach, one needs to implement a restriction. I will assume in line with Beck & Reis 2018 that questions require a question operator to interpret question alternatives on a sentence level/propositional level. Thus, alternatives of *wh*-in situ expand higher up the clause until they reach a Q-morpheme which is interpreted as a question operator that uses the question alternatives. Question alternatives of genuine questions cannot expand further after they met a question operator inside *wh*-islands. This produces an island effect. If no such restriction applies as in case of adverbial islands that do not contain any Q-morpheme inside embedded sentences and for that matter a question operator, the alternatives expand further on. This produces the desired effect of interpreting *wh*-in situ inside certain islands such as adverbial sentences. However, this approach is still too flexible, as it needs to account for why *wh*-in situ in Italian and Spanish cannot correlate with a maximally widened domain. I will suggest a restriction on the alternatives generation in this type.

In order to derive the interpretation of *wh*-in situ in SpecifQ, I first apply the analysis of regular questions in Beck & Reis 2018. Recall from the typology of *wh*-in situ inside different islands in section 2:

(61) C° *che/que* ‘that’ [-Q]

(62) C° *se/si* ‘if’ [+Q]

The question interpretation of *wh*-in situ inside embedded clauses with a complementizer *C* that does not have any Q feature as in (61) is unproblematic because alternatives can rise up via functional application until they meet the next Q-operator or any other operator that can interpret them. The following example of *wh*-in situ in the adverbial clause in (63) does not pose any problem for the interpretation because adverbial clauses do not contain any Q-morpheme inside the complement clause CP1 or any operator that uses up alternatives triggered by the *wh*-in situ. In consequence, the alternatives triggered by *wh*-in situ element can reach the interrogative complementizer in the matrix clause in CP2 as shown in (63) ii.¹⁰:

(63) Context: a political debate: [CORALimedts03] (It.)

A: Questi sono i dati da cui bisogna partire// per cercare che cosa?

We need to start from these data // to look for what

Di favorire una ricomposizione tra nord e sud (...)

‘to favor a compensation between north and south.’

- i. [CP2 C° [Q] [TP we need to start from these data [CP1 to look for what]]]
- ii. Question denotation= {we need to start from these data to look for a, we need to start from these data to look for b,}

¹⁰ Actually, the example contains an opaque verb *to look for* which adds additional complications to the analysis as opaque verbs take property-level arguments of type <e,t> (see Zimmermann 1993, among others). I ignore this complication here.

= $\lambda w.$ we need to start from these data to look for x in $w \mid x$ is Element of D } ordinary semantic level

The following question denotation of a *wh*-in situ inside a relative clause is also unproblematic because there is no intervener that could block the question interpretation inside the relative clause:

(64) ¿Las chicas que jugaban qué? [ESCOW2011] (Sp) the girls that played what
‘The girls that played WHAT?’

i. [CP C°[Q]] [TP it’s [DP the girls that played what]]]

ii. Question denotation={it’s the girls that played a , it’s the girls that played b ,}

= $\lambda w.$ it’s the girls that played x in $w \mid x$ is Element of D } ordinary semantic level

Recall from the empirical observation in section 2 that this type cannot appear in nonD-linked questions. The alternatives must be thus restricted to a smaller domain than non-D-linked questions. I represent this restriction in line with Beck & Reis 2018 as follows. The domain of the *wh*-element is restricted to a single element or a single true answer as in EQs, but in contrast to EQs the single element or true answer is not provided in the immediate discourse but in some distant discourse or some common ground knowledge of the discourse participants. The crucial point of my analysis is that the domain of the *wh*-in situ in islands in non-EQs cannot be non-D-linked or cannot contain a maximally widened domain of the sort in (65)a’:

(65) a. $\text{Alt}(\text{wh-in situ in SpecifQ}) = \{z: z \text{ is the unique contextually relevant object of the appropriate type}\} \Rightarrow$

a’ $\text{Alt}(\text{wh-in situ in SpecifQ}) = \{z: z \text{ is not element of } D \text{ where } D \text{ contains all possible candidates for wh-in situ}\}$

b. $\text{Alt}(\text{what in situ in SpecifQ}) = \{ze\} = \{\text{that}\}$

(my adaptation of Beck&Reis2018)

How to exclude genuine question interpretation of *wh*-in situ inside islands? Nothing prevents an alternative based question interpretation inside *if*-clauses or *wh*-islands. Yes-no question operator is conventionally assumed to be a function mapping a proposition to a set containing a positive and a negative value, we get the alternatives in (66):

(66) $[[\text{if}]] = \lambda p. \{p, \text{neg}(p)\}$

In any version of Hamblin’s semantics, including Beck (2006), the yes-no question operator defined in (66) is able to combine with a set of propositions via the pointwise function application, generating a set of polar questions:

(67) $\{[[\text{if}]]\} + \{\text{I heard } a, \text{I heard } b\} = \{\{\text{I heard } a, \text{neg}(\text{I heard } a)\}, \{\text{I heard } b, \text{neg}(\text{I heard } b)\}\}$

We thus need to explain what is wrong with the derivation in (67). Similarly, it is not clear why *why*-questions cannot contain a *wh*-in situ with genuine question interpretation as in (68):

(68) $\text{Why I have done what? } \{ \text{“because” } a, \text{“because” } b \} + \{ \text{I have done } c, \text{I have done } d \} = \{ \text{“because” } a, \text{I have done } c, \text{“because” } b, \text{I have done } d, \text{“because” } a, \text{I have done } d, \text{“because” } b, \text{I have done } c \}$

The simplest way to restrict this overgeneralization is to encode the interpretational restriction lexically by a certain type of *wh*-in situ, i.e. EQ type or SpecifQ type as suggested above in (65). Another way to prevent it from generalization is to encode the types of alternatives on both the Q-

operator and wh-in situ element. If the if-operator takes two propositions as in (66), it requires a wh-in situ element of an appropriate type, it cannot c-command wh-elements of an individual type:

(69) $[C^\circ \text{ If } = \lambda p_{\langle s, t \rangle} \{ p, \text{neg}(p) \} \dots \dots [\cdot \text{wh-in situ } \lambda x_{\langle e \rangle} \{ a, b \}]]$

Thus, assuming that the if-operator usually takes two alternatives with a positive and a negative value $\{p, \text{non}(p)\}$, the lack of genuine question interpretation in (70) can be explained by the fact that the wh-in situ does not give the right alternative set to the next local question operator which is the if-operator because the wh-in situ triggers a different set of alternatives than the one required by the if-operator. This is shown in (70) by the different index between Q_k and wh-in situ:

(70) A: Le preguntó si había oído. B: ¿Si había oído qué? [ESCOW2011] (Sp.) (EQ only) 'A: I asked you if you have heard of it? B: If I have heard what?

*[CP if C° [Q_k] [TP I have heard what_i]]

I summarize. According to my analysis, wh-in situ inside islands can be only interpreted if the alternatives triggered by the wh-in situ are interpreted by the matrix Q-operator. Such islands represent embedded clauses without any Q-feature (for example complement clauses, relative clauses or adjunct clauses). The special interpretation of wh-in situ inside these islands needs further treatment. The specific interpretation is encoded lexically as a domain restriction on alternatives which cannot denote a maximally widened set of alternatives and needs to be restricted to singleton domain with a unique alternative anaphorically related to previous discourse or common ground knowledge.

This approach accounts for the distribution of wh-in situ inside islands and their interpretations, i.e. echo-question interpretation is possible everywhere and question interpretation as a specificational question is restricted to certain islands without Qfeature.

5. Conclusion and Issues for Future Research

The basic issue that I have tried to address in this article is the question of how the wh-in situ in islands can be accounted for in Spanish and Italian. I have shown that it has a specific interpretation in the corpus data. It has the function of EQs and of questions that ask to specify an implicit argument (SpecifQs). Wh-in situ in islands that are not interpreted as EQs show restrictions in their distribution. They are only possible in complement clauses that do not contain any question morpheme Q that marks a sentence as a question.

I have proposed to analyse EQs in line with Beck & Reis 2018 question interpretation that are analysed as a distinguished set of alternatives in contrast to the set of alternatives of standard questions. I have suggested a similar analysis for SpecifQs that are interpreted as a distinguished set of alternatives.

Wh-in situ in complement clauses without a Q-morpheme can be interpreted without any problem because the alternatives can expand further until they reach the Q-morpheme in the matrix clause. That is why no intervention occurs in complement clauses introduced by *che/que* 'that' or adverbial complementizers such as It. *per/Sp. para* 'to/for'. Complement clauses that do contain a question morpheme or any other question operator such as if-clauses, can produce a type clash if they select for different types of alternatives than the one provided by the wh-in situ element.

It needs to be pointed out that the empirical generalization is very limited as it is based on a limited study. Although the written corpora I used are very big and are used as reference corpora (especially CORIS), they do not represent all the possible configurations and contexts of wh-in situ in the Spanish and Italian population. It is thus important to replicate the results and generalizations in an experimental study with speaker's judgements.

Corpora:

C-ORAL-ROM (CORAL) = Cresti, E. / Moneglia, M. (eds) (2005): *C-ORAL-ROM: Integrated Reference Corpora for Spoken Romance Languages*, Amsterdam/ Philadelphia.

CORIS = Corpus di italiano scritto. Centro Interfacoltà di linguistica teorica e applicata.

Università di Bologna. 2001. (URL: http://corpus.cilta.unibo.it:8080/coris_ita.html).

ESCOW2011 = Web corpus of Spanish (URL: <http://hpsg.fu-berlin.de/cow/colibri/>).

Conflicts of Interest: The authors declare no conflicts of interest.

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