Brazilian Portuguese (BP) can have the wh-element in-situ with two types of sentence intonation: (a) the rising intonation of a yes/no question, in which case it is interpreted as an echo question, and (b) the falling intonation, similar to that of a declarative sentence, in which case it is interpreted as an ordinary question. Kato (2013) analyzed the falling intonation type as a fake wh-in-situ, with a short movement of the wh-element to a lower focus position, inspired by Miyagawa’s (2001) proposal for Japanese whereas the rising intonation type was analyzed in accordance with Kayne’s (1994) proposal, with the whole TP containing the wh-element moving to Spec of C. In this article we maintain the analysis of the wh-in-situ with falling intonation as a fake in-situ but analyze the echo question as a short yes/no indirect question. The languages used to support this analysis of BP are English, French, and Japanese.

Key-words: Wh-in-situ; Echo question; Focus positions; Intonation; Brazilian Portuguese

* I would like to thank Marcello Marcelino for his usual help in revising my English.
RESUMO

O Português Brasileiro (PB) pode ter o elemento-Q in-situ com dois tipos de entoação na sentença: (a) com a entoação ascendente de uma sentença interrogativa direta sim/não, caso em que ela é interpretada como pergunta-eco e (b) com a entoação descendente de uma sentença declarativa, caso em que ela é interpretada como uma pergunta-Q ordinária. Para Kato (2013) esta última é um falso in-situ, com o elemento-Q movendo-se para uma posição baixa de Foco (cf. Miyagawa, 2001), enquanto a que se realiza com curva ascendente é analisada segundo a proposta de Kayne (1994), para quem o TP inteiro contendo o elemento-Q se move para Spec de C. No presente artigo, mantemos a análise da sentença com Q-in-situ, com curva descendente, mas reanalisaremos a sentença com interpretação de pergunta-eco como uma pergunta indireta sim/não. As línguas usadas para embasar esta análise do PB são o inglês, o francês e o japonês.

Palavras-chave: Q-in-situ; Pergunta-eco; Posições de Foco; Entoação; Português Brasileiro

1. Introduction

English is known to have two types of wh-questions: one with the wh-element in-situ, interpreted as an echo question, and the other with the wh-element dislocated, a real question3:

(1) a. You saw who? (echo question)
b. Who did you see? (ordinary question)

Japanese, on the other hand, only presents in-situ questions, whether as an echo or an ordinary question, but the main difference lies in the overt complementizers: -tte for echo questions and –ka/-no3 for ordinary questions.

(2) a. Kimi-wa dare-o mitta-tte? (echo question)
   you-top who-accus saw-tte
b. Kimi-wa dare-o mitta-no? (ordinary question)
   you-top who-accus saw-no

2. *Wh-in-situ is also present in multiple wh-questions.
3. Who bought what?
3. -no is the polite version of –ka.
Brazilian Portuguese (BP) has rising intonation (↑) in echo \textit{in-situ} questions and falling intonation (↓) in ordinary \textit{in-situ} questions (Kato, 2013a).

(3) a. Você viu quem? \textsuperscript{↑} (echo question) (rising intonation)
   you saw who
   
   b. Você viu quem? \textsuperscript{↓} (ordinary question) (falling intonation)
   Lit.: Who did you see?

BP can also have cleft \textit{in-situ} questions as ordinary questions (Kato, 2013a). The copula and complementizer can be erased in (4b) and (4c) (Kato, 2014):

(4) a. Foi quem que chegou? \textsuperscript{q} (ordinary question) (was who that arrived)
   
   b. (E) quem que tá tocando? \textsuperscript{q} (ordinary question) (is who that is playing)
   
   c. Quem (que) tá tocando? \textsuperscript{q} (ordinary question)

The questions to be answered are as follows:

a) What is the source of echo questions—namely, why doesn’t the \textit{wh}-word move, and what determines its specific intonation?

b) What accounts for the possibility of BP to behave like Chinese or Japanese, with respect to the \textit{wh-in-situ} option? Are the \textit{in-situ} normal questions really comparable to the Chinese and Japanese constructions?

c) Does the \textit{wh}-sit in the same position in both the echo and the regular questions in BP?

We hypothesize that the \textit{wh}- in (3a) and (3b) can have different sources:

(a) the echo question is an elliptical indirect speech, which accounts for the rising intonation, and the \textit{wh}-constituent does not move

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\textsuperscript{4} We consider only the final contrastive intonation at the end, and not other possible intonational differences elsewhere in the sentence.
because Comp is occupied with an embedding complementizer without the wh-feature, which attracts the wh-words; and

(b) regular questions are direct questions, and I will present two alternatives for discussion: (b1), which is a slight modification of Hornstein, Nunes, and Grohmann’s (2005) analysis, and (b2), in which I claim that the wh-constituent is only apparently in-situ, undergoing a short movement to a lower FocusP position (Kato, 2013a, 2013b).

2. The Wh-parameter

2.1. [+Wh-movement] languages versus [- wh-movement languages]

Huang (1982) proposed the wh-parameter, according to which languages can have either overt wh-movement, like English, or covert wh-movement, like Japanese.

For Miyagawa (2001), the wh-phrase in English is associated with both Q-features and wh-features. Consequently, the entire wh-phrase has to move to Spec of CP to satisfy the EPP feature on C. In Japanese, the two features are distributed between two morphologically independent items: ㎏ in C and the wh-word in T. Thus, C does not project its Specifier, as head movement can satisfy the EPP feature of C. Thus, according to Miyagawa’s view, we may have languages with [long wh-movement, to C] versus [short wh-movement, to T]. We will be assuming the latter view.

2.2. Optional [wh-movement] languages

Some languages, like French, can have both the dislocated and the in-situ types of ordinary questions and are known as optional wh-movement languages (cf Cheng & Roorick, 2000; Kato, 2013b).^5

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^5. See also Bosković (1998), who analyzes French as having LF insertion of C° with a strong wh-feature.
French is an example of such a language and exhibits the following characteristics:

(a) **wh-questions** can have **wh-fronted** (with or without *est-ce que*), as in (5a);
(b) **ordinary questions** can have **wh-in-situ**, with no visible element in Comp (5b);
(c) **echo questions** must have **wh-in-situ**, with no visible element in Comp, as in (5b); and/or
(d) **yes/no questions** have no visible element in Comp and can start with *est-ce que*, as in (5c).

We can add that all these examples have rising intonation.

(5) a. Qui (*est-ce que*) Marie a aimé (ordinary or inverse-cleft wh-question) 
   who is it that Mary has loved
b. Marie a aimé *qui* ? (ordinary or echo question)
   Mary has loved who
c. (Est-ce que) Marie a aimé ce garçon? (yes/no question)
   is it that Mary has loved this guy

French has restrictions for **wh-in-situ** constructions, as it cannot have **wh-in-situ** in either complement clauses, as in (6), or in islands.

(6) * Marie pense que Jean a acheté *quoi*? (wh-in-situ inside complement 
   M thinks that J has bought what clauses)

Moreover, French has **rising intonation** (↑) in both ordinary and echo questions:

(7) a. Jean a acheté une voiture? (yes/no question)
   John has bought a car
   ‘Has John bought a car?’
b. Jean a acheté *quoi* ? (echo or non-echo question)
   John has bought what

According to Cheng and Roorick (2000), both French **yes/no questions** and **wh-in-situ** questions share the same rising intonation, due
to the same Q morpheme. The presence of this Q morpheme bans the movement of the *wh*-word. Q can appear optionally in the numeration. If it is not in the numeration, *wh*-movement occurs.

3. Brazilian Portuguese (BP)

3.1. BP: An optional [*wh-movement*] language?

The examples in (3a) and (4b) above suggest that BP is an optional *wh-in-situ* language. But notice that only the echo question has the same intonation as a regular *yes/no* question and that the genuine question has a falling intonation (↓). Let us compare the French example above with the BP examples below:

(8) a. Quem (que) a Maria amou?↑ (ordinary question or cleft question)
    b. A Maria amou quem? ↑ (echo question)
    c. A Maria amou quem? ↓ (ordinary *wh*-question)
    d. A Maria amou este moço? ↑ (ordinary *yes/no* question)

Hornstein, Nunes and Grohmann’s (HN&G) (2005) analysis precludes optionality as the variants would be accounted for in terms of lexical choice. According to the authors, there are three Comps: one lexical *que*, with [+*wh*-feature], and two null Comps, one with [+*wh*-feature] and one without—namely, the *in-situ* one.

(9) a. \[ \text{CP} \text{Quem}_{\text{wh}}[\text{que}_{\text{wh}}[\text{você viu t }] \]
    who that you saw
    b. \[ \text{CP} \text{Quem}_{\text{wh}}[\emptyset_{\text{wh}}[\text{você viu t }] \]
    c. \[ \text{CP} \emptyset_{\text{wh}}[\text{você viu quem}] \]

The problem in this analysis lies in the fact that the choices are based on two phonologically identical forms with opposite values.6

There are, moreover, further differences between French and BP. First, BP allows *wh-in-situ* in embedded clauses of verbs that do not

6. See a similar view in Mioto (2001), for whom there is also the insertion of $\emptyset_{\text{wh}}$ before *spell-out.*
Echo questions in Brazilian Portuguese

select questions as complements (10b) and only disallows \textit{wh-in-situ} when the verb selects a question (10c).

(10) a. João comprou \textit{o quê}\? (falling intonation)
    John bought what

b. Maria pensa que o João comprou \textit{o quê}\? (falling intonation)
    Mary thinks that the John bought what

c. * A Maria perguntou se o João encontrou \textit{quem}\? (falling intonation)
    Mary asked whether John met who

Second, BP allows \textit{wh-in-situ} in islands:

(11) Maria pensa que o João conheceu o homem que comprou \textit{o que}\? (falling intonation)

To maintain HN&G’s analysis, without postulating the $\emptyset_{+wh}$, Kato (2013) proposed that the structure (9b) would result from a stylistic erasure of $\textit{que}_{-wh}$ in PF. The speaker has only two lexical choices: $\textit{que}_{-wh}$ and $\emptyset_{-wh}$.

Kato (2013a, 2013b) only analyzed the echo question as a real \textit{in-situ} case, the ordinary question being a fake-\textit{in-situ}, with the \textit{wh}-element undergoing a short movement, like in Miyagawa’s (2001) analysis of Japanese. However, instead of moving the \textit{wh}-element to T, Kato proposed that it moves to a low Focus position, in the periphery of \textit{vP}. Such a position has been proposed by Belletti (2004) as an extension of Rizzi’s (1997) cartographic view for languages that can have Topic and Focus in a lower position than in the sentence periphery.

For Kato and Raposo (1996), the Focus head is a syncretic head that checks both the Focus and \textit{wh}-elements.

(12) a. $\text{[} \text{ForceP} \ldots \text{[} \text{TopP} \ldots \text{[} \text{FocP} \ldots \text{[} \text{TopP} \ldots \text{[} \text{FinP} \ldots \text{[} \text{TP} \ldots \ldots \ldots \text{]} \text{]} \text{]} \text{]} \text{]} \text{]} \text{]} \text{]}$ (Rizzi, 1997: sentence periphery)

b. $\text{[} \text{CP} \ldots \text{[} \text{TP} \ldots \text{[} \text{TopP} \ldots \text{[} \text{FocP} \ldots \text{[} \text{TopP} \ldots \text{[} \text{IP} \ldots \text{[} \text{VP} \ldots \text{]} \text{]} \text{]} \text{]} \text{]} \text{]} \text{]} \text{]}$ (Belletti, 2004: \textit{vP} periphery)

Kato (2013a, 2013b) proposed that the CP is not the only position to check \textit{wh}-features. She suggested that \textit{wh}-checking, in \textit{wh-in-situ} constructions in BP, do not take place at the left sentential periphery,
but in a lower projection, above vP, which we assume to be FocusP (Belletti, 1998), an A’-position. Languages can be of three types:

a. only peripheral FocusP/CP (English)
b. only clause-internal FocusP (Japanese)
c. both peripheral and clause-internal FocusP (BP)

Kato (2013a, 2013b) concluded that there are no real wh-in-situ languages, but that there are languages with either long or short movement. Thus, BP would have both long and short wh-movement.

3.2. BP: A language with long wh-movement?

Until now we have been assuming that, besides a short wh-movement, BP also has a long wh-movement. Historically BP was a V2 type of language (cf. Kato & Ribeiro, 2009), with the wh-element moving to the left periphery of the sentence. After the loss of the V2 grammar in the classic period, BP started having the inverse cleft type of sentence, with the copula occupying the second position (cf. Lopes Rossi, 19967), interpreted in Kato (2018) as a process of grammaticalization.

(13)  a. Como veestes vós a aqueste ermo?  (14th c.)
   how came you to this deserted place
   ‘How did you get to this deserted place?’
   b. E quando é que são relativos?   (17th c.)
   and when is that they are relatives
   ‘And when is it that they are relatives?’

In the 19th century BP started to show the fake wh-in-situ construction8 as a genuine question. This was followed by the appearance of canonical cleft questions, where the copula no longer appears in second position, but in first position This, in turn, was

7. Old Portuguese (OP) also exhibited the pseudo-cleft type of wh-question, like in Spanish, but due to the scarce occurrence of this construction, we will not include it in our analysis.
8. Lopes Rossi (1996) did not consider the in-situ cases as fake in-situ.
followed by the grammaticalization of the copula, which lost the *consecutio temporum*, becoming invariable.

(14) a. Você foi *onde* esta manhã?
   You went *where* this morning
   ‘Where did you go this morning?’
   b. É *onde* que você foi *esta* manhã?
   Is *where* that you went *this* morning
   ‘Where did you go this morning?’

The canonical cleft construction follows the short *wh*-movement of the fake *in-situ* construction as the *wh*-element has only a short *wh*-movement:

(15) \[TP \É [FocusP *onde* [vP É [FiniteP que [TP as crianças dormem [vP as crianças dormem *onde*]]]]]]

BP easily erases the copula in first position, even in declarative clauses, as shown in Kato (2007):

(16) a. (É) um gênio o seu filho.
    Is a genius the your son.
    ‘He is a genius, your son.’
   b. (É) quem tá tocando violão?
    is *who* that is plying guitar
    ‘Who is playing the guitar?’

As canonical cleft questions appear in the language, the copula is easily erased, yielding an apparent long *wh*-movement with a complementizer *que*, in accordance with what both HN&G (2005) and Mioto (2001) proposed.

(17) a. É *de* *que* que ele está rindo?
    is of *what* that he is laughing
    ‘What is he laughing at?’
    b. De *que* que ele está rindo?

As the inverse cleft became a canonical cleft, the *wh*-Focus was no longer in the periphery of the complement clause of the copula, but instead in the low vP of the copula.
Kato (2018) also proposed that the construction in (17b) can have the suppression of the complementizer *que*, a stylistic rule that started as a rule of haplology (avoidance of identical syllables).

(18) a. De *que que* ele está rindo?  > b. De *que* ( ) ele está rindo.

Kato proposed that the erasure of the complementizer extended, by analogy, to other cases where the haplology condition does not apply. The final pattern in (17b), *wh-SV*, has been studied by Kato and Duarte (2002) as being derived directly from the V2 construction *whVS*, as BP changed from a [+NS] (+ Null Subject) language to a [-NS] language. As the NS parameter included VS inversion, it would be natural for the *wh-SV* order to be a consequence of the change in the NS parameter. The same thesis was advocated by Ordoñez and Olarrea (2006) for Caribbean Spanish, which also lost its V2 pattern in *wh*-questions. However, Kato (2013a, 2013b) used diachronic arguments to show that, before changing into the *wh-SV* order, BP had already acquired the fake *wh-in-situ* order and the canonic cleft pattern of Focus constructions.

| OP & ClassicP | WhVS | 14th-18th |
| EuropeanP | WhVS | 18th-20th |
| BP | %WhVS | 18th-20th |

| | Wh é que | % | Wh é que |
| | VS/SV | Wh | que |
| | SV | Wh | que |
| | Wh | que |
| | Wh | SV |
| | Wh | SV |

**Figure 1.** Types of BP *wh*-questions through time (adapted from Kato, 2018)

Kato (2018) referenced Figure 2 to show the structural pattern that divides Modern BP from ClassicP and EP: The former has only short *wh*-movement whereas the latter has only long *wh*-movement. The structural difference is clearer before PF—namely, before copula and complementizer erasure.

<table>
<thead>
<tr>
<th>Long <em>wh</em>-movement</th>
<th>Short <em>wh</em>-movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2</td>
<td>Inverse cleft</td>
</tr>
<tr>
<td>wh-VS</td>
<td>wh-é que-SV</td>
</tr>
<tr>
<td>OP CIP</td>
<td>CIP EP</td>
</tr>
<tr>
<td>BP</td>
<td>SVwh-</td>
</tr>
</tbody>
</table>

**Figure 2.** From Old and Classic Portuguese to BP (adapted from Kato, 2018)
The conclusion is that, as far as the \textit{wh}-parameter is concerned, BP is closer to Japanese and Chinese, which are both \textit{wh-in-situ} languages, whereas EP pairs up with English, a \textit{wh}-movement language.

4. Echo questions in Universal Grammar (UG)

At the beginning of this chapter, we pointed out that BP behaves exactly like French and English with regard to echo questions, also known as \textit{wh-in-situ} constructions in the literature. These constructions present \textit{wh-in-situ} with rising intonation.

(19) a. A Maria comprou \textbf{o que}? ↑
    b. Marie a acheté \textbf{quoi}? ↑
    c. Mary has bought \textbf{what}? ↑

In Kato (2013a, 2013b) the derivation proposed for these sentences was based on Kayne’s (1994) antisymmetry perspective. He did not differentiate between echo questions and ordinary short-movement questions. According to the author:

(a) the \textit{wh}-element remains \textit{in-situ}; and
(b) the whole TP moves to Spec, CP in such sentences.

(20) \[ \text{CP} [\text{TP A Maria comprou o que}] \text{[CP Spec CP]} \text{]} \]

Recall that Japanese also has rising intonation in echo questions, the difference being the addition of the complementizer -tte at the end of the sentence.

(21) Mary-wa \textbf{nani-o} kata-tte? ↑
    Mary-top what-accus bought \textbf{Comp}

(22) \[ \text{CP} [\text{TP Mary-wa nani-o kata]} \text{[CP IT]} \text{]} \]

We should also consider that, in all the languages that we have been analyzing, the echo question is identical in intonation to a \textit{yes/no} question:
Although at first sight we could use Kayne’s proposal for the BP questions, in this paper we will consider a different perspective more along the lines of what happens in Japanese. We have seen the contrast between ordinary and echo questions in sentences (2a) and (2b), repeated below as (24a) and (24b). Recall that ordinary questions in Japanese are of the fake in-situ type in Miyagawa’s (2001) and Kato’s (2013) view, with the wh-element moving to a sentence internal Focus position. The C of the wh-clause in Japanese is overt (ka/no), as is the complementizer of echo questions (-tte); both are in the head final position.

When such questions appear embedded in a speech act type of a main clause, the complementizers appear overtly: -tte for the embedded echo question and -to for the ordinary wh-question. When only the embedded part appears overtly, the echo question retains the complementizer -tte of the embedded clause, and the ordinary question retains the complementizer of the main clause -no.

9. Recall that, for Miyagawa (2001), the wh-element moved to a position adjacent to T. We proposed that in BP it moved to a Focus position adjacent to vP.
In BP the complementizer in the main clause is $\emptyset_1$ for echo questions and $\emptyset_2$ for ordinary questions. In BP the difference at spell-out is not morphological, but prosodic: The ordinary question appears with a falling intonation after PF whereas the echo question appears with a rising intonation.

(26) a. $[\text{CP} \emptyset_1 [\text{Você disse} \ [\text{CP} \text{que} [\text{TP você viu quem} ]]]] \rightarrow \uparrow$
    b. $[\text{CP} \emptyset_2 [\text{Você disse} [\text{CP} \text{que} [\text{TP você viu quem} ]]]] \rightarrow \downarrow$

Our last proposal is that the apparent simple echo question is actually a complex structure with the echo question embedded in a speech act main clause occupying the projection ForceP in the cartographic model (Rizzi, 1997). The whole derivation of (26a) is as in (27a1–a3), with the following steps:

(a) the lower TP moves to Spec,ForceP

(b) the Remnant TP$_1$ undergoes ellipsis; and

(c) the $\emptyset_1$ complementizer assigns rising intonation to the resulting structure at PF.

(27) a.1. $[\text{ForceP} [\text{Force} \emptyset [\text{TP você disse} \ [\text{CP} \text{que} [\text{TP você viu quem} ]]]]] \rightarrow \uparrow$
   a.2. $[\text{ForceP} [\text{TP você disse} \ [\text{CP} \text{que} [\text{TP você viu quem} ]]]] \rightarrow \uparrow$
   a.3. PF: Você viu quem? $\uparrow$

The echo question in Japanese shows how the complementizer -tte is part of the initial structure and remains after spell-out. Recall that, being head-final, Japanese has its complementizers to the right.

(28) a. [[[Kimi-wa [kimi-ga dare-o mitta-tte] yutta]-no]]? (Indirect question)
    you-top you-nom who-accus saw-tte said-no

(29) a. [[[Kimi-ga dare-o mitta]-tte]] (Echo question)

English, French, and Portuguese do not exhibit a complementizer like Japanese, which has the complementizer -tte that also appears

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10. The cartographic model, which started with Rizzi (1997), has other projections like TopP and FocP that can be read in Kato (2013b, 2018).
in complex indirect questions. This led to the hypothesis that echo questions are actually reduced indirect questions that also have rising intonation.

5. Conclusions

This study has shown how far we have come from the classic *wh*-parameter when we examine languages as different as BP and Japanese, with the addition of a more well-behaved language like English.

We first tried to see whether BP was a partial type of [-*wh*-movement] language, like French. Failing to find any similarity, we decided to compare it with a distant language, like Japanese, with which we had previously compared it in terms of a fake *in-situ* language, regarding ordinary *wh*-questions with short *wh*-movement (Kato, 2013). Having been successful in that enterprise, we decided to compare the two languages for echo questions.

What we found is that the echo type was much more universal, with the languages sharing the same rising intonation. Using the overt complementizer *-tte* in Japanese, we proposed that the echo type can be analyzed as a covert embedded clause that is moved to the Spec of a higher projection, the ForceP, after which the TP1 undergoes remnant ellipsis.

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Recebido em: 20/08/2018
Aprovado em: 14/10/2018