

**WH-EXTRACTIONS AND RELATIVE CLAUSES IN BRAZILIAN PORTUGUESE**  
(Extrações-WH e Orações Relativas no Português Brasileiro)

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*ABSTRACT: This paper aims to describe and explain WH-extraction patterns out of island contexts in Brazilian Portuguese (BP), by means of the principles established by Generative Theory. I claim that BP uses a strategy for the extraction of subjects which involves a special case of Agreement. Extractions out of relative islands are possible when the extracted WH-phrase ends up in the specifier position of the higher CP and from there it behaves as the subject of the predication. The subject-predicate relationship established under agreement makes Comp a proper governor for traces in subject position under its scope. The analysis proposed makes a distinction between two processes of relative clause formation. One in which que is an operator that transforms sentences into predicates and sits in the Comp position of a CP whose specifier can be occupied by a QP functioning as the subject of the predication. The other, in which que is a WH-word, traditionally treated as a pronoun, occupying the specifier position of a QP and introducing relative clauses as we know them.*

*KEY WORDS: WH-Extractions, Relative Clauses, Predication.*

*RESUMO: Este artigo tem por objetivo descrever e buscar uma explicação para o comportamento de extrações de sintagmas QU- do português brasileiro (PB) para fora de contextos que ficaram conhecidos pelo nome de ilhas, utilizando os princípios da Teoria Gerativa que explicam as propriedades dessas construções nesta e em outras línguas. Argumenta-se que o PB utiliza uma versão da estratégia de concordância em CP, estabelecida por meio de uma relação de predicação, para a extração de sintagmas QU- a partir da posição de sujeito. A análise proposta para essas extrações evidenciou a existência de dois processos sintáticos diferenciados na construção das orações relativas. Um em que que é um operador que transforma sentenças em predicados, ocupa a posição de núcleo de CP em cujo especificador pode-se encontrar o sintagma que funciona como sujeito da predicação. Outro em que que é um elemento QU-, o que tradicionalmente poderia ser caracterizado como um pronome, que ocupa a posição de especificador de um sintagma quantificado, e introduz as relativas tal como tradicionalmente descritas.*

*PALAVRAS-CHAVE: Extrações de Sintagmas-QU, Sentenças Relativas, Predicação.*

## 1. Introduction

One of the ways by which Generative Theory captures the observation that a certain phrase may exhibit behavior compatible with two different syntactic positions is by assuming movement of the phrase in question from one to the other position involved. WH-questions and relative clauses are two examples of such constructions. Treating them in this way made it possible to observe general patterns and asymmetries in the distribution of those phrases within the same language and across languages, which, in turn, are explained by general principles of the grammar.

This paper aims to offer an account of the behavior of WH-question and relative clause extractions in Brazilian Portuguese (BP) by means of the principles already established by the theory as playing a role in explaining the properties of these constructions in other languages. In doing so, the paper will also offer an analysis for relative clauses in this language, showing that work being done on relative clauses in BP have treated two different constructions under the same analysis: restrictive relative clauses and another construction that I will call pseudo-relative clauses, following McCawley (1988).

A theory explaining the behavior of WH-questions and relative clauses through movement has to take into consideration the following questions:

- 1) what elements move from where?
- 2) to where do they move?
- 3) how do they move?
- 4) why do they move?

In this paper I will address the two first questions.

## 2. The BP facts

In pursuing an answer for the first question, we have to examine the paradigms involving the structural position occupied at D-structure by the WH-phrase within its clause, plus the kind of clause itself. The

paradigm in (1) shows the behavior of WH-phrases when extracted from subject (1a), object (1b) and adjunct (1c) positions out of *that*-complement clauses:

- (1) a. Quem<sub>1</sub> você acha [que t<sub>1</sub> saiu da festa mais cedo]?  
 who<sub>1</sub> do you think that t<sub>1</sub> left the party earlier  
 b. Quem<sub>1</sub> você acha [que a Maria encontrou t<sub>1</sub> na festa]?  
 Who<sub>1</sub> do you think that Maria met t<sub>1</sub> at the party  
 c. Por que<sub>1</sub> você acha [que a Maria foi até a casa do Pedro t<sub>1</sub>] ?  
 why<sub>1</sub> do you think that Mary went to Pedro's house t<sub>1</sub>

With *that*-complement clauses, extraction from the three positions is grammatical in BP. Unlike English, extraction from the subject can be done even though the complementizer is always overtly present (Complementizer deletion is not allowed in BP).

However, an asymmetry shows up when we try to extract out of WH-complement clauses:

- (2) a. Quem<sub>1</sub> a secretária não sabe [se t<sub>1</sub> já deixou o currículo para ser analisado]?  
 who<sub>1</sub> the secretary do not know whether t<sub>1</sub> left the curriculum to be analysed  
 b. O que<sub>1</sub> a secretária não sabe [se a Cristina deixou t<sub>1</sub> no departamento]?  
 who<sub>1</sub> the secretary do not know whether Cristina left t<sub>1</sub> in the Department  
 c. \*Por que<sub>1</sub> a secretária não sabe [se a Cristina deixou estes documentos no Departamento t<sub>1</sub>]?  
 why<sub>1</sub> the secretary do not know whether Cristina left this documents at the Department t<sub>1</sub>
- (3) a. Que aluno<sub>1</sub> você não sabe [quando<sub>2</sub> t<sub>1</sub> vai entregar o trabalho t<sub>2</sub> ]?  
 Which student<sub>1</sub> you do not know when<sub>2</sub> t<sub>1</sub> is going to hand in the paper t<sub>2</sub>  
 b. Que aluno<sub>1</sub> você não sabe [quando<sub>2</sub> o professor vai entrevistar t<sub>1</sub> t<sub>2</sub> ] ?  
 which student<sub>1</sub> you do not know when<sub>2</sub> the professor is going to interview t<sub>1</sub> t<sub>2</sub>  
 c. \*Por que<sub>2</sub> você não sabe [que trabalho<sub>1</sub> o aluno não entregou t<sub>1</sub> t<sub>2</sub> ]?  
 why<sub>2</sub> you do not know which paper<sub>1</sub> the student did not hand in t<sub>1</sub> t<sub>2</sub>

Sentences (2) and (3) show that extraction out of indirect question clauses (WH-islands) is fine when the extracted WH-phrase occupies either the subject ((2a) and (3a)) or the object position ((2b) and (3b)). However, if it is sitting on an adjunct position, extraction creates an ungrammatical sentence ((2c) and (3c)).

The pattern exhibited by extraction out of complement clauses contrasts with the one exhibited by extraction out of adjunct clauses in (4) and subject clauses in (5):

- (4) a. \*Quem<sub>1</sub> o João saiu da festa antes que t<sub>1</sub> tivesse entregado o presente?  
Who<sub>1</sub> John left of the party before that t<sub>1</sub> had given the present
- b. \*Quem<sub>1</sub> o João saiu da festa antes que a Maria tivesse encontrado t<sub>1</sub>?  
who<sub>1</sub> John left of the party before that Mary had met t<sub>1</sub>
- c. \*De que modo<sub>1</sub> o João saiu da festa antes que a Maria tivesse tratado o Pedro t<sub>1</sub>?  
in which manner<sub>1</sub> John left of the party before that Mary had treated Peter t<sub>1</sub>
- (5) a. ?\*Quem<sub>1</sub> [que t<sub>1</sub> recebeu doações ilegais para sua campanha] é óbvio?  
Who<sub>1</sub> that t<sub>1</sub> received illegal contributions to his campaign is obvious
- b. ?\*Quem<sub>1</sub> [que a Academia vai escolher t<sub>1</sub> para ganhar o prêmio] é óbvio?  
Who<sub>1</sub> that the Academy will choose t<sub>1</sub> to win the prize is obvious
- c. \*Quando<sub>1</sub> [que a Maria vai entregar o trabalho t<sub>1</sub>] é óbvio?  
When<sub>1</sub> that Maria will hand in the paper t<sub>1</sub> is obvious

The sentences in (4) and (5) show that in adjunct and subject clauses, the syntactic position occupied by the WH-phrase does not matter. Extraction out of them produces ungrammatical sentences. Nonetheless, if the subject clause is extraposed, the ungrammaticality disappears. WH-extractions out of extraposed subject clauses patterns WH-extractions out of *that*-complement clauses:

- (6) a. Quem<sub>1</sub> é óbvio [que t<sub>1</sub> recebeu doações ilegais para sua campanha]?  
Who<sub>1</sub> it is obvious that t<sub>1</sub> received illegal contributions to his campaign
- b. Quem<sub>1</sub> é óbvio [que a Academia vai escolher t<sub>1</sub> para ganhar o prêmio]?  
Who<sub>1</sub> it is obvious that the Academy will choose t<sub>1</sub> to win the prize
- c. Quando<sub>1</sub> é óbvio [que a Maria vai entregar o trabalho t<sub>1</sub>]?  
When<sub>1</sub> it is obvious that Maria will hand in the paper t<sub>1</sub>

It seems interesting to observe the pattern of extractions out of complement and adjunct clauses of nouns, that is, the set of data which in traditional terms was captured by the *Complex Noun Phrase Constraint*. The sentences in (7) show the pattern of extraction out of sentences which are complements of nouns. The asymmetry “argument versus adjunct” ((7a-b)) vs. (7c)) is also found in the extraction out of a clause which is the complement of a noun:

- (7) a. ?Quem<sub>1</sub> o Pedro ficou chocado com a notícia de que t<sub>1</sub> está namorando a Maria?  
Who<sub>1</sub> Peter got chocked with the news of that t<sub>1</sub> is dating Mary
- b. ?Quem<sub>1</sub> o Pedro ficou chocado com a notícia de que a Maria está namorando t<sub>1</sub> ?  
who<sub>1</sub> Peter got chocked with the news of that Mary is dating t<sub>1</sub>
- c. \*Como<sub>1</sub> o Pedro ficou chocado com a notícia de que o Pedro tinha morrido t<sub>1</sub> ?  
how<sub>1</sub> Peter got chocked with the news of that Peter have died t<sub>1</sub>

In the case of extraction out of relative clauses, a different pattern is observed:

- (8) a. Que animais<sub>1</sub> o diretor do Zoo disse que a comida<sub>2</sub> que t<sub>1</sub> comeram t<sub>2</sub> estava estragada ?<sup>1</sup>  
which animals<sub>1</sub> the director of the Zoo said that the food<sub>2</sub> that t<sub>1</sub> ate t<sub>2</sub> was deteriorated
- b. ???Que animais<sub>2</sub> o diretor do Zoo disse que a comida<sub>1</sub> que t<sub>1</sub> matou t<sub>2</sub> estava estragada?  
Which animals<sub>2</sub> the director of the Zoo said that the food<sub>1</sub> that t<sub>1</sub> killed t<sub>2</sub> was deteriorated
- c. \*De que modo<sub>2</sub> o diretor do Zoo disse que os animais<sub>1</sub> que as crianças alimentaram t<sub>1</sub> t<sub>2</sub> eram da África?  
In which way<sub>2</sub> the director of the Zoo said that the animals<sub>1</sub> that the children fed t<sub>1</sub> t<sub>2</sub> were from Africa
- d. \*De que modo<sub>1</sub> o diretor do Zoo disse que as crianças<sub>2</sub> que t<sub>2</sub> trataram dos animais t<sub>1</sub> estavam muito felizes  
in which way<sub>1</sub> the director of the Zoo said that the children<sub>2</sub> that t<sub>2</sub> treated the animals t<sub>1</sub> were very happy

<sup>1</sup> This sentence corresponds to example (30a) used by Lobato (1986:419) to show that extractions out of some islands are possible in BP.

Extraction of a subject over a relativized object (8a) is perfect, but extraction of an object over a relativized subject (8b) is not as good. Extraction of an adjunct either over a relativized subject (8d) or a relativized object (8c) results in ungrammaticality. However, some further remarks about the data in regard to extraction out of relative clauses is in order.

First, building up the data for testing the extraction possibilities has to be done very carefully in order to control for other variables that may be playing a role in the results obtained. For example, sentences (9) exhibit a different pattern:

- (9) a. ??Que comida<sub>1</sub> o diretor do Zoo disse que os animais<sub>2</sub> que t<sub>2</sub> comeram t<sub>1</sub> foram dormir?<sup>2</sup>  
Which food<sub>1</sub> the director of the Zoo said that the animals<sub>2</sub> that t<sub>2</sub> ate t<sub>1</sub> went to sleep
- b. Que comida<sub>1</sub> o diretor do Zoo disse que os animais<sub>2</sub> que t<sub>2</sub> comeram t<sub>1</sub> passaram mal?  
Which food<sub>1</sub> the director of the Zoo said that the animals<sub>2</sub> that t<sub>2</sub> ate t<sub>1</sub> got sick

Sentence (9b) may sound perfect at first, because we can attribute it a different analysis. In as much as anteposed PPs may have their preposition deleted in BP, the WH-phrase *que comida* ‘which food’ may be interpreted as an argument of the predicate *passaram mal* ‘got sick’, meaning that ‘the animals got sick with the food’, in which case it has been extracted out of a *that*-complement clause.

Second, extractions out of relative clauses whose head is in subject position are much better than the ones in which the head is in object position. This claim can be attested if we compare the sentences in (8a-b) with the sentences in (10a-b):

- (10) a. ?\*Que animais<sub>1</sub> o diretor do Zoo disse que a televisão mostrou as crianças<sub>2</sub> que t<sub>1</sub> atacaram t<sub>2</sub>?  
Which animals<sub>1</sub> the director of the Zoo said that the television showed the children<sub>2</sub> that t<sub>1</sub> attacked t<sub>2</sub>

<sup>2</sup> The strangeness of sentence (9a), in which the subject is extracted over a relativized object, will be explained later in the text.

- b. ?\*Que animais<sub>1</sub> o diretor do Zoo disse que a televisão mostrou as crianças<sub>2</sub> que t<sub>2</sub> alimentaram t<sub>1</sub>?  
Which animals<sub>1</sub> the director of the Zoo said that the television showed the children<sub>2</sub> t<sub>2</sub> fed t<sub>1</sub>

In sentences (10) the relative clause is attached to the DP *as crianças* ‘the children’ which occupies that object position of the complement clause, whereas in sentences (8) the relative clause is attached to the DP *a comida* ‘the food’, which is in subject position.

If the grammatical results achieved with extraction from the subject out of *that*-complement clauses and WH-islands is something that requires some adjustment in the principles of the theory, nevertheless it is a fact already accounted for in regard to a variety of languages. What is unexpected, as far as I know, is the asymmetry between subject extraction versus object extraction out of relative clauses. In this paper, I will propose that the same strategy of subject extraction used by BP to escape *that*-complement clauses and WH-islands plays a role in subject extraction out of relative clauses.

### 3. The Literature and the BP Data

Asymmetries of the kind observed in the BP data have been dealt with under the Generative framework by a principle that regulates the licensing of empty categories resulting from movement (traces), namely, the Empty Category Principle (ECP). This principle has received different formulations along the history of the theory. Rizzi (1990) revises Chomsky’s (1986) proposal, postulating that ECP could be formulated as comprising a formal licensing and an identification requirement. He ends up proposing that ECP is a principle dealing only with the formal licensing of traces:

- (11) ECP: a nonpronominal empty category must be properly head-governed (p. 87).

The identification requirement of traces is subsumed either under binding of referential chains, where by referential he means a chain formed by segments sharing a referential index attributed at D-structure

under theta-role assignment; or under government, a more local relationship. This system gives the possibility of accounting for the two kinds of asymmetries: 1) in terms of its formal licensing, subject traces pattern with adjunct traces against object traces, in as much as for a trace to be properly head governed, it must be governed by a head within its immediate projection, namely,  $X'$ ; 2) in terms of its identification, subject traces pattern with object traces against adjunct traces, because subjects and objects receive a referential index, in as much as they may receive a referential theta-role, whereas that is not the case with adjuncts.

The extraction pattern showed in the BP data described above may be explained in part by the principles of the theory as already proposed for other languages. For example, the ungrammaticality in the case of subject, object and adjunct extractions out of subject and adjunct clauses fall under the generalization expressed by the *Condition on Extraction Domains* (CED) proposed by Huang (1982), and as such can be captured by any of the proposals dealing with this kind of extraction in the literature (see Chomsky, 1986). Other than that, the analysis proposed for the Italian data in regard to the grammaticality of object and adjunct extractions out of *that*-complement clauses, in regard to the grammaticality of object extractions out of WH-islands, and in regard to the ungrammaticality of adjunct extractions out of WH-islands may account for equivalent BP sentences (see Rizzi, 1990). The problem seems to be the grammaticality of subject extractions out of *that*-complement clauses and WH-islands. This kind of extraction is also possible in Italian, but the attempt to extending to the BP data, the analysis proposed for this kind of extraction in the former language, requires discussion.

Rizzi discusses the symmetrical behavior in regard to subject and object extractions out of *that*-complement clauses and WH-islands, and claims that languages of the world seem to diverge in terms of the strategies they use to license subject traces. He describes three major strategies used in order to license subject traces. The first consists of transforming  $C^0$  into a proper governor when it hosts Agreement features. This is the case of English, which deletes the complementizer to avoid incompatibility with Agr features raised to  $C^0$ . This is also the case in French, a language in which the form of the complementizer changes, showing its agreement features. This is also true of V2 languages, in which the inflected verb moves to Comp. The second strategy is to



eliminate the gap through the insertion of a resumptive pronoun. This is true of languages such as Swedish and Vata. The third strategy, used by Null Subject languages, consists of extracting the subject from a post verbal position, a strategy available because those languages allow for free inversion of the subject. This is the case of Italian.

In the literature about BP we can find defenders of all three strategies. Moreira da Silva (1983) and more recently Vitral (1992) argued that the empty category is in fact a null resumptive pronoun. Figueiredo Silva (1994), who argues that empty categories in BP result from movement, claims that this language adopts the Agreement strategy, in the case of epistemic verbs, and the extraction from post-verbal position, in other cases. This latter conclusion is a little surprising, because in her dissertation she argues convincingly for the fact that BP, having lost the possibility of assigning Case under government, does not allow free inversion of the subject, a fact also recognized by other Brazilian linguists.

Based on the claims already made in the literature that BP has lost the possibility of free inversion of the subject, therefore it does not count on a post verbal position for subject extractions; and that empty categories in extraction contexts are traces of movement, in as much as they obey islands, as shown in this paper with adjunct islands; in the next section, I will develop the claim that BP uses a strategy for the extraction of subjects which involves a special case of Agreement.

#### 4. The strategy of Subject Extraction in BP

Rizzi (1990) explains the asymmetries in subject traces when extraction took place out of complement clauses in regard to extraction out of subject relative clauses in English by establishing a typology of complementizers in terms of the features [+/- wh] and [+/- pred(icative)]:

- (12) a. +wh -pred: (I wonder)    what    0    [ you saw t ]  
       b. +wh +pred: The thing    which    0    [ you saw t ]  
       c. -wh +pred: The thing    Op    that [ you saw t ]  
       d. -wh -pred: (I know)        that [ you saw t ] (p. 68)

*That* in English is incompatible with COMPs having a [+wh] feature. Therefore, if a trace of a WH-moved phrase has to be in COMP, *that*

must be deleted. Relative clauses have the feature [+pred], because they establish with their heads a predication relationship. *That* can cooccur with the null operator, which has a [+pred] feature, because Op is underspecified for the [+/- wh] features. Therefore, *that*-deletion does not have to take place in relative clauses.

To account for the data regarding subject extractions in BP two assumptions have to be made. First, the complementizer *que* is underspecified for the [+/- wh] features. As a consequence, *que* can occupy the head of a [+wh] COMP which has a WH-phrase in its specifier position. An evidence for this claim is the fact that in sentence (13), a grammatical sentence, *que* cooccurs with the WH-phrase *quem* under the same functional projection:

- (13) Quem<sub>1</sub> que João espera encontrar t<sub>1</sub> na festa?  
Who<sub>1</sub> that John expects to meet t<sub>1</sub> at the party

Second, *que* functions as an operator which transforms the clause under its scope into a predicate of the phrase occupying its specifier position, which in turn will function as the subject of the predication. Having established this predication relation under Spec-Head agreement, Comp becomes a proper governor for the trace in subject position.

The use of the agreement in Comp strategy to explain the grammaticality of subject extractions in Portuguese is not new. Zubizarreta (1982) claimed that agreement in Comp is the process taking place in European Portuguese when subject WH-phrases are extracted out of non-factive complement clauses. She says: “We may assume that Portuguese has recourse to the same strategy as French. The only difference is that in Portuguese the result of the morphological rule is phonologically identical to the complementizer. That is, the complementizer *que* and the trace of the nominative WH-morpheme in Comp rewrite as *que*.” (p. 85-86).

The analysis proposed in this paper differs from Zubizarreta’s proposal not only in its motivation and implementation, but also in its scope. The agreement in Comp strategy takes place in a large number of extraction contexts, even in the case of extractions out of relative clauses.

#### 4.1. Agreement in Comp: The Relative Clause Cases

Let's start by investigating two observations already presented: 1) extraction of a subject over a relativized object produced better results than extraction of an object over a relativized subject; 2) extraction out of relative clauses whose head is in subject position are much better than the one in which the head is in object position. The paradigm in (14)-(17) was built to test those observations. Each sentence exemplifies one of the two observations combined. Sentence (14) is an example in which the head of the relative clause is in the subject position of the matrix clause and is anaphorically<sup>3</sup> related to the object of the relative clause. In this case WH-movement extracts the subject of the relative:

- (14) [Que animais<sub>1</sub>] [a comida<sub>2</sub> [que t<sub>1</sub> comeram t<sub>2</sub>] estava estragada]?<sup>4</sup>  
 [which animals<sub>1</sub>] [the food<sub>2</sub> [ that t<sub>1</sub> ate t<sub>2</sub> ] was deteriorated ]  
 (14') A comida<sub>2</sub> [que que animais<sub>1</sub> comeram t<sub>2</sub>] estava estragada ?  
 the food<sub>2</sub> [that which animals<sub>1</sub> ate t<sub>2</sub>] was deteriorated

Sentence (15) is an example in which the head of the relative clause is in the subject position of the matrix clause and is anaphorically related to the subject of the relative clause. In this case WH-movement extracts the object of the relative:

- (15) \*[Que animais<sub>2</sub>] [a comida<sub>1</sub> [que t<sub>1</sub> matou t<sub>2</sub>] estava estragada]?  
 [which animals<sub>2</sub>] [ the food<sub>1</sub> [ that t<sub>1</sub> killed t<sub>2</sub> ] was deteriorated ]  
 (15') A comida<sub>1</sub> [que t<sub>1</sub> matou que animais<sub>2</sub> ] estava estragada ?  
 the food<sub>1</sub> [ that t<sub>1</sub> killed which animals<sub>2</sub> ] was deteriorated

Sentence (16) is an example in which the head of the relative clause is in the object position of the matrix clause and is anaphorically related to the object of the relative clause. In this case WH-movement extracts the subject of the relative:

<sup>3</sup> The word *anaphorically* is taken in a very generic sense to express the relationship with an antecedent.

<sup>4</sup> Sentence (14') represents sentence (14) before WH-extraction. This observation is also valid for all the examples having a (x') counterpart.

- (16) \*?[Que animais<sub>1</sub>] [a televisão mostrou as crianças<sub>2</sub> [que t<sub>1</sub> atacaram t<sub>2</sub>]]?  
 [which animals<sub>1</sub>] [the television showed the children<sub>2</sub> [that t<sub>1</sub> attacked t<sub>2</sub>]]  
 (16') A televisão mostrou as crianças<sub>2</sub> [que que animais<sub>1</sub> atacaram t<sub>2</sub>] ?  
 the television showed the children<sub>2</sub> [that which animals<sub>1</sub> attacked t<sub>2</sub>]

Sentence (17) is an example in which the head of the relative clause is in the object position of the matrix clause and it is anaphorically related to the subject of the relative clause. In this case WH-movement extracts the object of the relative:

- (17) \*?[Que animais<sub>2</sub>] [a televisão mostrou as crianças<sub>1</sub> [que t<sub>1</sub> alimentaram t<sub>2</sub>]]?  
 [which animals<sub>2</sub>] [the television showed the children<sub>1</sub> [that t<sub>1</sub> fed t<sub>2</sub>]]  
 (17') A televisão mostrou as crianças<sub>1</sub> [que t<sub>1</sub> alimentaram que animais<sub>2</sub>]?  
 the television showed the children<sub>1</sub> [that t<sub>1</sub> fed which animals<sub>2</sub>]

The pattern showed in the paradigm (14 – 17) leads to the conclusion that extraction of a subject WH-phrase out of a relative clause whose head is the subject of the matrix clause generates the best results. Nevertheless, this generalization does not seem to hold in sentences (18):

- (18) a. \*?[Que menina<sub>1</sub>] [os alunos<sub>2</sub> [que t<sub>1</sub> convidou t<sub>2</sub> para a festa] se arrependeram]?  
 [Which girl<sub>1</sub>] [the students<sub>2</sub> [ that t<sub>1</sub> invited t<sub>2</sub> to the party] felt sorry]  
 a'. Os alunos<sub>2</sub> [que que menina<sub>1</sub> convidou t<sub>2</sub> para a festa] se arrependeram ?  
 the students<sub>2</sub> [that which girl<sub>1</sub> invited t<sub>2</sub> to the party] felt sorry  
 b. ??[Que menina<sub>2</sub>][os alunos<sub>1</sub> [que t<sub>1</sub> convidaram t<sub>2</sub> para a festa] se arrependeram]?  
 [which girl<sub>2</sub>] [the students<sub>1</sub> [that t<sub>1</sub> invited t<sub>2</sub> to the party] felt sorry]  
 b'. Os alunos<sub>1</sub> [que t<sub>1</sub> convidaram que menina<sub>2</sub> para a festa] se arrependeram  
 the students<sub>1</sub> [that t<sub>1</sub> invited which girl<sub>2</sub> to the party] felt sorry

The judgments in sentences (18) are reversed if compared with sentences (14 – 17). Subject extraction out of a relative clause whose head is the subject of the matrix clause (18a) generates an unacceptable sentence whereas object extraction out of a relative whose head is the

subject of the matrix clause (18b) is more acceptable. Things get even more complicated in sentences (19):

- (19) a. ??[Que rapaz<sub>1</sub>][a comissão premiou o conto<sub>2</sub> [ que t<sub>1</sub> escreveu t<sub>2</sub> ]]?  
 a'. A comissão premiou o conto<sub>2</sub> [que que rapaz<sub>1</sub> escreveu t<sub>2</sub> ]  
 b. \*[Que comissão<sub>1</sub>][o rapaz escreveu o conto<sub>2</sub> [que t<sub>1</sub> premiou t<sub>2</sub> ]]?  
 b'. O rapaz escreveu o conto<sub>2</sub> [que que comissão<sub>1</sub> premiou t<sub>2</sub> ]

In both sentence (19a) and (19b) the WH-phrase is extracted from the subject position out of a relative clause whose head is the object of the matrix clause. Although both are not perfect, (19a) is acceptable whereas (19b) is ungrammatical. At this point, an observation is in order. Although the resumptive pronoun strategy may be used to improve those sentences, their acceptability varies in the same direction than the acceptability of the sentences in (18) and (19):

- (20) a. ?[Que menina<sub>1</sub>][os alunos<sub>2</sub> [que ela<sub>1</sub> convidou t<sub>2</sub> para a festa] se arrependeram]?  
 [which girl<sub>1</sub>] [the students<sub>2</sub> [that she<sub>1</sub> invited t<sub>2</sub> to the party] felt sorry] ?  
 b. [Que menina<sub>2</sub>][os alunos<sub>1</sub> [que t<sub>1</sub> convidaram ela<sub>2</sub> para a festa] se arrependeram]?  
 [which girl<sub>2</sub>] [the students<sub>1</sub> [that t<sub>1</sub> invited her<sub>2</sub> to the party] felt sorry ]?  
 c. [Que rapaz<sub>1</sub>][a comissão premiou o conto<sub>2</sub> [ que ele<sub>1</sub> escreveu t<sub>2</sub> ]]?  
 [which boy<sub>1</sub>][ the committee gave a prize to the short story<sub>2</sub> [that he<sub>1</sub> wrote t<sub>2</sub> ]]?  
 d. ???[Que comissão<sub>1</sub>][o rapaz escreveu o conto<sub>2</sub> [que ela<sub>1</sub> premiou t<sub>2</sub> ]]?  
 [which committee<sub>1</sub>][ the boy wrote the short story<sub>2</sub> [that she<sub>1</sub> gave a prize t<sub>2</sub> ]]?

The sentences in (20) are evidence for the fact that although BP can build interrogative sentences with resumptive pronouns, this is not the strategy being used for WH-extractions in this language. Moreover, the data presented so far is counterevidence for analyses that claim that it is because BP has resumptive empty pronouns that islands can be violated in this language. If overt or empty resumptive pronouns were the strategy adopted by BP to avoid island effects, all those sentences would have to be equally acceptable.

The examination of all the cases involving subject and object extraction out of relative clauses leads to the conclusion that, in order for the sentence to be acceptable, some kind of relation must hold between the eventualities expressed by the two sentences related through relativization. If we build an example in which the two sentences express independent eventualities, even if we relate both sentences through relativization, WH-extraction will produce an ungrammatical sentence. The comparison between the sentences in (21) with the sentences in (22) and (23), both cases in which the extraction is of a subject WH-phrase out of a relative clause whose head is the subject of the matrix clause, shows a contrast in acceptability:

- (21) a. Meu aluno encontrou alguns amigos  
my student met some friends  
b. Os amigos sabem falar inglês  
the friends know to speak English  
c. Os amigos<sub>1</sub> [que meu aluno<sub>2</sub> encontrou t<sub>1</sub>] sabem falar inglês  
the friends<sub>1</sub> [the my student<sub>2</sub> met t<sub>1</sub>] know to speak English  
d. \*[Que aluno<sub>2</sub>][os amigos<sub>1</sub> [que t<sub>2</sub> encontrou t<sub>1</sub>] sabem falar inglês]]?  
[which student<sub>2</sub>][ the friends<sub>1</sub> [that t<sub>2</sub> met t<sub>1</sub>] know to speak English]]?
- (22) a. Um motorista desconhecido atropelou uma criança  
an unknown driver run over a child  
b. A criança ficou muito machucada  
the child got very hurt  
c. A criança<sub>1</sub> [que um motorista desconhecido<sub>2</sub> atropelou t<sub>1</sub>] ficou muito machucada  
the child<sub>1</sub> [that an unknown driver<sub>2</sub> run over t<sub>1</sub>] got very hurt  
d. ?[Que motorista<sub>2</sub>][a criança<sub>1</sub> [que t<sub>2</sub> atropelou t<sub>1</sub>] ficou muito machucada]]?  
[which driver<sub>2</sub>][ the driver [ that t<sub>2</sub> run over t<sub>1</sub> ] got very hurt]]?
- (23) a. A cozinheira fez a comida  
the cook made the food  
b. A comida matou os animais  
the food killed the animals  
c. A comida<sub>1</sub> [que a cozinheira<sub>2</sub> fez t<sub>1</sub>] matou os animais  
the food<sub>1</sub> [that the cook<sub>2</sub> made t<sub>1</sub>] killed the animals  
d. [Que cozinheira<sub>2</sub>][a comida<sub>1</sub> que t<sub>2</sub> fez t<sub>1</sub>] matou os animais]]?  
[which cook<sub>2</sub>][the food<sub>1</sub> that t<sub>2</sub> made t<sub>1</sub>] killed the animals]]?

The contrast between (21), on one hand, and (22) and (23), on the other, is evidence that the relationship between the two eventualities expressed in the matrix and the relative clause makes WH-extractions more acceptable. Moreover, although it is very hard to characterize this relationship between eventualities, it does not seem unsound to claim that in order for this greater acceptability to take place, the eventuality expressed by the VP of the relative clause takes place in a time prior to the time of the event corresponding to the matrix clause. In other cases, it is an antecedent-consequence relationship that seems to hold, in other words, the eventuality expressed by the main clause seems to close the sequence of eventualities.

An observation has to be made in regard to the sentences in (22). Sentence (22d) is ambiguous: it has a first interpretation in which the child run over the driver and end up hurt. Even though pragmatically odd, this interpretation seems to be the preferable one. If we build the structures corresponding to this interpretation, we will see that it is a case of object WH- extraction out of a relative clause whose head is the subject of the matrix clause. The second interpretation corresponds to the structure presented in (22d), which is also possible. If so, why is sentence (15), repeated here as (24), much worst?

- (24) \*?[Que animais<sub>2</sub>] [a comida<sub>1</sub> [que t<sub>1</sub> matou t<sub>2</sub>] estava estragada]?  
 [which animals<sub>2</sub>] [ the food<sub>1</sub> [ that t<sub>1</sub> killed t<sub>2</sub>] was deteriorated]

Being a sentence in which an object extraction out of a relative clause whose head is the subject of the matrix clause was performed is not the problem with (24). The unacceptability of (24) comes from the fact that the relationship between eventualities is reversed: *killing the animals* should be the eventuality closing the sequence. Sentence (25) in contrast with (26) support the claim even further:

- (25) a. Os ladrões roubaram o banco  
 the robbers robbed the bank  
 b. Os ladrões foram presos  
 the robbers were put in jail  
 c. Os ladrões<sub>1</sub> [que t<sub>1</sub> roubaram o banco<sub>2</sub>] foram presos  
 the robbers<sub>1</sub> [that t<sub>1</sub> robbed the bank<sub>2</sub>] were put in jail  
 d. [Que banco<sub>2</sub>] [os ladrões<sub>1</sub> [que t<sub>1</sub> roubaram t<sub>2</sub>] foram presos]]?  
 [which bank<sub>2</sub>] [the robbers<sub>1</sub> [that t<sub>1</sub> robbed t<sub>2</sub>] were put in jail]]?

- (26) a. Os ladrões roubaram o banco  
the robbers robbed the bank
- b. Os ladrões moram em outra cidade  
the robbers live in another city
- c. Os ladrões<sub>1</sub> [que t<sub>1</sub> roubaram o banco<sub>2</sub>] moram em outra cidade  
the robbers<sub>1</sub> [that t<sub>1</sub> robbed the bank<sub>2</sub>] live in another city
- d. ?\*[Que banco<sub>2</sub>] [os ladrões<sub>1</sub> [que t<sub>1</sub> roubaram t<sub>2</sub>] moram em outra cidade]]?  
[which bank<sub>2</sub>] [the robbers<sub>1</sub> [that t<sub>1</sub> robbed t<sub>2</sub>] live in another city]]?

Sentence (26d), in which the eventualities *to rob the bank* and *to live in another city* are independent, is ungrammatical, whereas sentence (25d), in which the eventualities *to rob the bank* and *to be put in jail* express a cause-effect relationship is perfect.

The contrast between (19a) and (19b), a case of extraction out of relatives whose head is in object position, also reinforce this conclusion. *To write a short story* and *to win a prize* are related eventualities and the eventuality closing the sequence is the eventuality expressed by the main clause.

The claim that the unacceptability of (24) comes from the fact that the eventuality corresponding to the consequence should be the closing sequence eventuality is related to one of the properties proposed by McCawley (1988) to characterize a third type of relative clauses: “There is a class of cases in which what appears at first glance to be restrictive relative clauses behave more like the cleft clauses than the restrictive relatives (...) The apparent relative clauses, which I will henceforth refer to as pseudo-relative clauses, also differ from ordinary restrictive relatives with regard to a constraint ( the Complex NP constraint) that excludes extraction of material from a relative clause construction”(p. 428).

According to McCawley, pseudo-relatives usually occur in the coda of existential sentences. The sentences in (27), McCawley’s (34a) and (35a), show the contrast between extraction out of a restrictive relative (27a) and extraction out of a pseudo-relative (27b):

- (27) a. \*Which books did John praise the person who wrote  $\phi$ ?  
b. ?Which persons do you think there are many Americans who distrust  $\phi$ ?



Other properties associated with pseudo-relatives are: they appear in final position in regard to the sentence in which they are embedded and they can be paraphrased by an existential clause in which the relative is the main clause. Moreover, based on work done by Prince (apud McCawley), he points out that pseudo-relatives are the only relatives that allow deletion of the subject relative pronoun, that is, they allow *that*-deletion, which is the strategy used by English to render grammatical sentences containing extraction out of a subject position in *that*-complement clauses. The sentences in (28), his examples (3), are examples of *that*-deletion in relative clauses:

- (28) a. I have a friend  $\phi$  called me yesterday  
 b. We got a lot of fancy cadillacs  $\phi$  don't tip

McCawley also points out that those sentences correspond to a class of Chinese sentences, studied by Huang (apud McCawley, 1988), which shows up in the coda of existential sentences, in final position, and are not introduced by any particle. They differ from Chinese relative clauses, which precede their heads and are closed by the *-de* particle.

Brazilian Portuguese has a very used strategy for giving indefinite quantifier phrases wide scope, which correspond to existential sentences having a relative clause in its coda. Following McCawley, we can characterize them as pseudo-relatives. The interesting is that the acceptable sentences exhibiting extraction out of relative clauses may have an existential version, as shown in (29):

- (29) a. Tem uns animais que a comida que comeram estava estragada.  
 there are some animal that the food that they ate was deteriorated  
 b. Tem uma cozinheira que a comida que fez matou os animais  
 there is a cook that the food that cooked killed the animals  
 c. Tem um rapaz que a comissão premiou o conto que escreveu  
 there is a boy that the committee gave a prize to the short story wrote

The proposal developed is that extraction out of relative islands is possible when the extracted WH-phrase ends up in the specifier position of the higher CP and from there it behaves as the subject of the predication. The subject-predicate relationship established under

agreement makes Comp a proper governor for traces in subject position under its scope. Independent eventualities do not allow the establishment of a predication relationship. Consequently, in cases like that, Comp will not be a proper governor for traces in subject position and ECP will be violated. The possibility of having an overt complementizer *que* ‘that’ occupying the head position of CP renders visible the predication relationship between the WH-phrase and the sentence transformed into a predicate by the operation of *que*:

- (30) a. [<sub>CP</sub> [Que animais]<sub>1</sub>] [<sub>C</sub>. que a comida<sub>2</sub> [que t<sub>1</sub> comeram t<sub>2</sub>] estava estragada]?  
 [which animals]<sub>1</sub> [ that the food<sub>2</sub> [ that t<sub>1</sub> ate t<sub>2</sub> ] was deteriorated ]
- b. [<sub>CP</sub>[Que rapaz]<sub>1</sub>][<sub>C</sub>. que a comissão premiou o conto<sub>2</sub> [ que t<sub>1</sub> escreveu t<sub>2</sub>]]?  
 [which boy]<sub>1</sub>[that the committee gave a prize to the short story<sub>2</sub>[that t<sub>1</sub> wrote t<sub>2</sub>]]?

The analysis proposed in this article in regard to the strategy used in BP for extracting WH- phrases out of islands gives motivation to one of the properties raised by McCawley to characterize pseudo- relatives, namely, the property of appearing in final position in regard to the sentence in which they are embedded. This property is recaptured in terms of the need to establish a predication relationship.

The proposal that subject extraction out of relatives is licensed by a predication relationship which establishes agreement in Comp and renders C° a proper governor has to be extended for the subject extraction cases out of *that*-complement clauses and WH-islands.

#### 4.2. The Analysis Implementation

Subject WH-Extractions out of *that*-complement clauses, as in the case of sentence (1a) repeated here as (31) is derived in the following way:

- (31) Quem<sub>1</sub> você acha [que t<sub>1</sub> saiu da festa mais cedo]?  
 who<sub>1</sub> do you think that t<sub>1</sub> left the party earlier

The WH-phrase *quem* moves to the specifier position of the embedded CP, whose head is occupied by the operator *que*. A predication relation takes place and consequently, agreement between the referential features of the WH-phrase renders Comp a proper governor for the trace. From there, the WH-phrase moves to Comp in the matrix sentence. The licensing conditions are fulfilled and the interpretation of the empty category is given by binding by an antecedent.

Let's see now the cases of subject extraction out of WH-islands, as in (3a), repeated as (32a) and (32b):

- (32) a. Que aluno<sub>1</sub> você não sabe [quando<sub>2</sub> t<sub>1</sub> vai entregar o trabalho t<sub>2</sub> ]?  
Which student<sub>1</sub> you do not know when<sub>2</sub> t<sub>1</sub> is going to hand in the paper t<sub>2</sub>
- b. Que moça<sub>1</sub> você não sabe [com que rapaz<sub>2</sub> t<sub>1</sub> saiu t<sub>2</sub> ontem ]?  
Which girl<sub>1</sub> you do not know with which boy<sub>2</sub> t<sub>1</sub> went out t<sub>2</sub> last night

In (32a) the WH-phrase *que aluno* moves first to the specifier (Spec) position of the embedded COMP, leaves a trace there and goes on to the Spec of the matrix COMP. Being in a Spec-Head relation, Agreement takes place and the embedded COMP receives the referential index from the subject trace left there. Consequently, COMP becomes a proper head licenser for the trace in the subject position.

It is time now to address the second question raised in the introduction of this paper, namely, where do WH-Phrases move to? We assumed that WH-phrases are the 'subject' of a predicate created by the operator *que*. Therefore, they move to the specifier position of the phrase headed by *que*. However, in (32a-b) we are dealing with two moved WH-phrases. BP is a language that does not allow for two WH-phrases to surface in the same COMP system, as shown in (33):

- (33) a. \*Que aluno<sub>1</sub> quando<sub>2</sub> você não sabe [t<sub>1</sub> vai entregar o trabalho t<sub>2</sub> ]?  
Which student<sub>1</sub> when<sub>2</sub> you do not know t<sub>1</sub> is going to hand in the paper t<sub>2</sub>
- b. \*Que moça<sub>1</sub> com que rapaz<sub>2</sub> você não sabe [t<sub>1</sub> saiu t<sub>2</sub> ontem ]?  
Which girl<sub>1</sub> with which boy<sub>2</sub> you do not know t<sub>1</sub> went out t<sub>2</sub> last night

I do not want to discuss in this paper the internal structure of the CP system. Since we need two specifier positions available for phrases to move to, either we propose that we have CP adjunction or COMP has two specifier positions. So, in sentence (32a) the WH-phrase *quando* also moves to a specifier position within the COMP system. The trace of the adjunct phrase is locally antecedent governed by the WH-phrase *quando*, which stays in the embedded COMP, otherwise ungrammaticality would result. The WH-phrase *quando* being an adjunct, is not theta-marked and does not have a referential index. Although *quando* is in a specifier position of the embedded COMP system, it does not have a referential index to turn COMP into a proper governor for traces. It is the trace of the subject moved WH-phrase that gives its index to COMP turning it into a proper governor for the trace in subject position. This explains the grammaticality of (32a).

However, things may be more complicated with sentence (32b). In (32b) the object WH-phrase surfaces in the Spec position of the embedded COMP and the subject WH-phrase is in the Spec of the main clause. Since the object WH-phrase is referentially theta-marked, it has a referential index which, in turn, can be transferred to the embedded COMP. The question is how is the trace in subject position properly head governed? Probably we could say that the subject extraction in this sentence is a case of long distance binding (in terms of its interpretation) and having a referential index suffices for a COMP to be a proper head licenser of the trace. Rizzi argues against this hypothesis, requiring that Agreement in COMP takes place when the AGR features of COMP are the subject trace features.

However, another route may be pursued. We can keep the assumption that the subject WH-phrase has first moved to the Spec position of the embedded COMP, being in a Spec-Head agreement relation with *que* it gives it its index, and then moves on to the matrix COMP. The object WH-phrase also moves to another Spec position of the embedded COMP system, but cannot transfer its index to the whole COMP, because it already has the subject trace's index. At this point of the investigation I do not have evidence to decide which is the best alternative.

The last case to be treated is the subject extraction out of relative clauses, here represented by our very known sentence:

- (34) [Que animais<sub>1</sub>] [a comida<sub>2</sub> [que t<sub>1</sub> comeram t<sub>2</sub>] estava estragada]?  
 [which animals<sub>1</sub>] [the food<sub>2</sub> [ that t<sub>1</sub> ate t<sub>2</sub> ] was deteriorated ]

If we adopt the raising analysis of relative clauses proposed by Kayne (1994), following Vergnaud, we can say that the WH-phrase *que comida* ‘which food’ in the object position of the embedded clause, raises to one of the most embedded specifier positions of Comp and the NP *comida* moves to a specifier position of the quantified phrase introduced by the WH-word *que*. Then the WH-phrase *que animais* moves to the higher specifier position, enters in a predication relation, renders C<sup>o</sup> a proper governor for the trace, and moves again to the specifier Comp position of the matrix clause. The same proposal made for the cases of extraction out of WH-islands applies here in regard to being the WH-phrase establishing the predication relation with the whole clause the one to transfer the referential features that renders the embedded clause a proper governor for traces. This is why only interrelated eventualities, which in turn allow the establishment of the predication relationship, that generate acceptable sentences.

## 5. WH-Extractions and Relative Clauses

The analysis proposed made a distinction between two processes of relative clause formation. One in which *que* is an operator that transforms sentences into predicates and sits in the Comp position of a CP whose specifier can be occupied by a QP functioning as the subject of the predication. It introduces the kind of clause called pseudo-relative, which appears in existential constructions, WH-extraction constructions and probably, cleft sentences. The pseudo-relative is the prototypical construction showing the strategy used by BP to extract subject WH-phrases, namely, agreement in Comp established through predication.

The other, in which *que* is a WH-word, traditionally treated as a pronoun, occupying the specifier position of a QP and introducing relative clauses as we know them.

Kato (1993) proposes an insightful analysis for relative clauses in BP. She starts reviewing Tarallo’s (1983) classical proposal by which BP has three different strategies for relative clause formation: 1) the standard relative, in which the WH-phrase moves from its base position

to a specifier position in the CP system; 2) the resumptive pronoun strategy in which *que* is a complementizer occupying the head position of CP; 3) and the gap-leaving strategy, formed by the ellipsis of the constituent containing the resumptive pronoun. Kato shows that in the three cases raised by Tarallo, the *que* introducing the clause is a relative pronoun. For her, the difference among them resides in the fact that relativization takes place from the left-dislocated position occupied by the relative pronoun in the case of the last two strategies.

The analysis developed in this article shares Tarallo's idea that *que* in relative clauses may occupy either the specifier or the head position of CP. It also shares Kato's idea that a predication relation is established between the relative clause and its head, which is similar to the one observed in left-dislocation constructions.

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