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The alternation between improper indirect questions and DPs containing a restrictive relative*

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This paper analyses the alternation between improper indirect questions and DPs containing a restrictive relative in European Portuguese. We propose that this alternation is lexically restricted, only occurring with *weakly assertive cognitive definite predicates*, in the sense of Hinzen and Sheehan (2011), such as *saber*, ‘to know’ or *descobrir*, ‘to discover’. We also claim that the alternation between an improper indirect wh-CP and a DP containing a restrictive relative is possible because they share significant features, namely they both involve sentences with declarative illocutionary force and wh/operator chains, and exhibit a high level of referentiality, due to the D-linked nature of the whP in the improper indirect question and the definite and specific nature of the DP that includes the relative.

Keywords: improper indirect questions; restrictive relatives; weakly assertive cognitive definite predicates; European Portuguese; Spanish

1. Introduction

On the basis of examples like (1) in Spanish (Sp), from Moreno Cabrera (2002), Keenan and Hull (1973) show that in several languages indirect questions may find adequate synonyms in DPs containing a restrictive relative clause. According to Moreno Cabrera (2002), these examples are logically equivalent because ‘to know the route that the boat will take’ (1b) is to know the answer to the question embedded in (1a) ‘which route will take the boat’. In European Portuguese (EP) the same kind of alternation occurs, as shown in (2), although it has not been mentioned in the literature:

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- (1) a. *Juan sabe qué ruta tomará el barco.* (Sp)
 Juan knows which route will take the boat a
 ‘Juan knows which route the boat will take.’
- b. *Juan sabe la ruta que tomará el barco.* (Sp)
 Juan knows the route that will take the boat
 ‘Juan knows the route that the boat will take.’
- (2) a. *Nós descobrimos que dificuldades temos de enfrentar.* (EP)
 we discovered which troubles have to face
 ‘We discovered which kind of troubles we have to face.’
- b. *Nós descobrimos as dificuldades que temos de enfrentar.* (EP)
 we discovered the troubles that have to face
 ‘We discovered the troubles we have to face.’

Keenan and Hull (1973), as well as Moreno Cabrera (2002), take these data as evidence that indirect interrogatives may be expressed by different strategies across languages: embedded interrogative sentences (e.g. Finnish), relative clauses (e.g. some Melanesian, Austronesian and African languages), or both (e.g. English and Spanish). In accordance, they seem to reduce the different structures in the examples (1) and (2) to instances of the same phenomenon: indirect interrogatives.

Some researchers also claim that, under certain circumstances, examples of the type (1) may be equivalent to *Concealed Questions*. The example in (3a) illustrates a prototypical case, where a single DP occurs, instead of the indirect question in (3b) (Romero 2005: 687):

- (3) a. They revealed/announced *the winner of the contest*.
 b. They revealed/announced who won the contest.

From a syntactic point of view, this approach appears as problematic. Rather, within the current Minimalist Program (Chomsky 1995, 2008), we would expect the computational system to build up distinct structures, despite the paraphrase relations established, and to account for their differences and similarities in a modular way, as a consequence of the choices from the Lexicon and the different arrangements occurring in Syntax.

Moreover, although the *wh*-nature of the embedded clauses in (1a), (2a) and (3b) is undeniable, they differ, in their behavior, from indirect questions selected by predicates with an intrinsic interrogative meaning, like *preguntar* ‘ask’ or *preguntar-se* ‘wonder’ in Spanish (e.g. Plann 1982; Suñer 1991, 1993, 1999) or their correlates in EP. In order to distinguish between *wh*-clauses in (1a) and indirect questions, Suñer (1999) calls them *improper indirect questions*, a designation that we will adopt in this paper.

Thus, assuming the Principles & Parameters framework and taking into account the data from European Portuguese, the main goals of the current paper are threefold: (i) to describe the properties of improper indirect questions; (ii) to establish the class of predicates that selects them and allows for their alternation with DPs containing

restrictive relatives; (iii) to propose a modular analysis for the alternation between improper indirect questions and restrictive relatives that still accounts for the differences they exhibit in their syntactic behavior.

To achieve these aims, we will undertake a comparative analysis of improper indirect questions, paying special attention to the properties that distinguish them from proper indirect questions in Spanish and European Portuguese, as well as to those that oppose these two languages and are related to a major distinguishing phenomenon, the loss of the complementizer *que* 'that' preceding an interrogative complementizer or a *wh*-question in European Portuguese (cf. Section 2).

Considering that the occurrence of improper indirect questions is lexically restricted, as well as its alternation with restrictive relatives, we will try to establish the class of predicates that select improper indirect questions, and, among them, those that participate in the above mentioned alternation. Starting from a long-standing tradition in the syntax and semantics of complement clauses represented by Kiparsky and Kiparsky (1971), Karttunen (1971), Hooper and Thompson (1973) and more recently by Hinzen and Sheehan (2011), we will propose that only *weakly assertive cognitive definite predicates*, in the sense of Hinzen and Sheehan (2011), such as *saber*, 'to know', *descobrir*, 'to discover', *adivinhar*, 'to guess', *recordar*, 'to remember', may select both a DP or a CP/ForceP, a selection subject to some parametric variation. We will also claim that the syntactic and semantic features of the selecting predicate allow us to distinguish two types of the so-called concealed questions, but that there is no full overlapping between the verbs that select improper indirect questions and concealed questions (Section 3).

Finally, based on Rizzi's cartographic analysis, we will provide a modular analysis of proper and improper indirect questions and of the alternation between improper indirect questions and restrictive relatives. We will claim that the major differences between improper indirect questions and restrictive relatives rely on the inexistence versus existence of a DP including the *wh*P and on the presence of FocP in the former, but not in the latter. In addition, we claim that the alternation between those embedded clauses and the DP containing a restrictive relative clause is possible because they share significant features, namely declarative illocutionary force, as well as referentiality and specificity, due to the D-linked nature of the *wh*P in the improper indirect questions and to the definite and specific nature of the DP that includes the restrictive relative (Section 4).

2. The distinction between proper and improper indirect questions

2.1 Proper and improper indirect questions in Spanish and English

The distinction between proper indirect questions, in (4)–(5), and improper indirect questions, in (6)–(7), has been reported in the literature for English and Spanish

(e.g. Plann 1982; Suñer 1991, 1993, 1999), both for *wh*-questions (cf. examples in (a)) and for *yes/no* questions (cf. examples in (b)):¹

- (4) a. They {asked/wondered} which book John read. (En)
 b. Mary asked you whether it is raining.
- (5) a. *Juan preguntó/ se preguntaba cuántos invitados*
 John asked/ wondered how many guests
iban a venir. (Sp)
 would come
 ‘John asked/wondered how many guests would come.’
 b. *María se preguntó (que) si se habría equivocado.* (Sp)
 Mary wondered (that) if was wrong
 ‘Mary wondered whether she was wrong.’
- (6) a. John knows how many students passed the test. (En)
 b. Mary knows whether they serve breakfast.
- (7) a. *Dijo cuáles eran sus actores favoritos: Nicholson y Newman.*² (Sp)
 said which were his actors favorite: Nicholson and Newman.
 ‘He revealed who his favorite actors were: Nicholson and Newman.’
 b. *Bri nos dijo si su abuela había ido a Madrid.*³ (Sp)
 Bri us told if her grandmother had gone to Madrid
 ‘Bri told us whether her grandmother had gone to Madrid.’

According to Suñer, several properties distinguish these two kinds of embedded clauses. From a discursive point of view, proper and improper questions differ as far as their illocutionary force is concerned: while proper indirect questions report a question, improper indirect questions have a declarative nature. Semantically, they differ with respect to their propositional status: proper indirect questions are not propositions, because they cannot be true or false (in (4b), *Mary asked you whether it is raining*, the embedded clause *whether it is raining* is not true nor false, since the matrix subject

1. The English examples are adapted from Karttunen (1977), although this author does not distinguish between proper and improper indirect questions. All the Spanish examples in this section are from Suñer (1999).

2. Suñer (1999:2158) remarks that some verbs (e.g. *decir* ‘say/told’) select improper and proper indirect questions, but their meaning slightly changes in each one of these cases. In the first case they preserve their intrinsic meaning; in the latter case they are interpreted as synonyms of *preguntar* ‘ask’.

3. One of the reviewers remarked that some native speakers of Spanish do not accept this sentence with the verb *decir* ‘tell’ in the past, but only in the future tense. We will return to this issue in Section 2.2.

does not know if it is raining or not)⁴; on the contrary, improper indirect interrogatives are propositions, since they have an assigned truth value: in (6b), *Mary knows whether they serve breakfast*, it is asserted that Mary knows the answer (yes or no) to the embedded sentence. Notice that the assertive meaning of improper indirect questions is valid from the point of view of the matrix subject, but not necessarily from the point of view of the speaker, as we can see in the continuation of the utterances: *Bri sabía si su abuela había ido a Madrid, pero no lo recuerdo*. ‘Bri knew (yes or no) if her grandmother had gone to Madrid, but I don’t remember.’ (Suñer 1999: 2157). Or: Mary knows (yes or no) whether they serve breakfast, but she refuses to tell, so I don’t know.

In accordance, paraphrases of true indirect questions include the expression *ask the question* (cf. (8b)), while improper indirect questions use the expression *to know the answer* (cf. (9b)):

- (8) a. *Bri preguntó (que) si su abuela había ido a Madrid.* (Sp)
 Bri asked (that) if her grandmother had gone to Madrid
 ‘Bri asked if her grandmother had gone to Madrid.’
- b. *Bri hizo la pregunta de si su abuela había ido a Madrid.* (Sp)
 Bri made the question of if her grandmother had gone to Madrid
 ‘Bri asked the question about whether her grandmother had gone to Madrid.’
- (9) a. *Bri sabía si su abuela había ido a Madrid.* (Sp)
 Bri knew if her grandmother had gone to Madrid
 ‘Bri knew if her grandmother had gone to Madrid.’
- b. *Bri sabía la respuesta de si su abuela había ido a Madrid.* (Sp)
 Bri knew the answer of if her grandmother had gone to Madrid
 ‘Bri knew the answer about whether her grandmother had gone to Madrid.’

4. Some authors do not share this point of view. This is, for instance, the case of Karttunen (1977) or Adger and Quer (2001), who consider that the semantics of an embedded yes/no question is a disjunction of two propositions. Adger and Quer claim that this approach may account for the choice between the interrogative complementizers, *if* and *whether*, in English. *Whether* is used when there is an explicit disjunction, since this morpheme contains *either* ‘as one of its morphological components, along with the wh-morpheme’ (Adger & Quer 2001: 120).

Syntactically, the two types of clauses also differ in Spanish. In this language proper indirect questions may exhibit the Recursive Comp phenomenon, as shown in (10); in contrast, in improper indirect questions the complementizer *que* may not precede the whP or the complementizer *si* (Suñer 1993, 1999), as shown in (11):

- (10) a. *Le preguntaron que a quién invitó*
 him/her asked that to whom has invited
Susi al concierto. (Sp)
 Susi to the concert
 ‘They asked him/her whom Susi has invited to the concert.’
- b. *Repetieron que si los visitaríamos la semana siguiente.* (Sp)
 repeated that if them visit the week next
 ‘They repeated that we would visit them next week.’
- (11) a. **Le explicaron que a quién invitó*
 him/her explained that to whom has invited
Susi al concierto. (Sp)
 Susi to the concert
 ‘They explained whom Susi has invited to the concert.’
- b. **Juana sabía que si visitaría a*
 Joana knew that if would visit to
sus abuelos para Navidad. (Sp)
 her grandparents for Christmas
 ‘Joana knew whether she would visit her grandparents at Christmas.’

The distribution of Recursive Comp is related to another property: the classes of predicates that select proper and improper questions (e.g. Rivero 1980; Plann 1982).⁵ Suñer claims that a significant proposal to distinguish between these two classes of predicates is *Plann’s generalization* (Suñer 1999:2158), which states that *only communication verbs that may quote a direct question may be used as predicates that select indirect questions*, as illustrated by the contrast in (12a) vs. (12b):

- (12) a. *Andrea preguntó/ dijo: “¿Quién va al partido?”* (Sp)
 ‘Andrea asked/ said: “Who goes to the party?”’
- b. **Andrea sabía/explicó: “¿Quién va al partido?”* (Sp)
 ‘Andrea knew/explicated: “Who goes to the party?”’

5. Rivero (1980) was one of the first authors to claim that the Recursive Comp in Spanish is “connected in a general way with verbs of saying” (*preguntar* ‘ask’, *repetir* ‘repeat’, *murmurar* ‘murmur’), in contrast with verbs of the type of *saber* ‘know’, *se enterar* ‘learn’, *adivinar* ‘guess’.

So, according to Suñer, verbs like *preguntar* ‘ask’, *repetir* ‘repeat’, *murmurar* ‘murmur’, which induce a Recursive Comp (cf. (10)), may quote a direct question, while verbs like *saber* ‘know’, *explicar* ‘explain’ do not (cf. (11)) and, hence, must be considered as improper indirect questions selectors.

Further work on the Recursive Comp phenomenon has however shown that this phenomenon was not a reliable criterion to distinguish between proper and improper indirect questions (Rivero 1994; Lahiri 2002).⁶ Among the arguments adduced, Rivero (1994) showed that it can also occur in indirect exclamatives (cf. (13)):

- (13) *Dijo que qué bonito era Madrid.* (Sp)
 said that how pretty was Madrid
 ‘He said how pretty Madrid was.’

Thus, Lahiri (2002) and Rivero (1994) claimed that Plann’s generalization should be taken as stating that only speech act predicates allow for an embedded argument introduced by the quotative marker *que*, in a Recursive Comp structure.⁷

Summarizing, there is some disagreement about the relevance of using the Recursive Comp phenomenon to distinguish between proper and improper indirect questions in Spanish.

Nevertheless, there is discursive and lexical evidence that differentiates these two types of embedded clauses.

6. According to an anonymous reviewer, the nature of wh-form may interfere with the acceptability of Recursive Comp in improper indirect questions; when the whP is *cuántos* ‘how many’, the acceptability improves:

- (i) **Descubrí/recuerdo que qué libro había leído Juan.* (Sp)
 found out /remember that which book had read Juan
 ‘I find out/ remember which book Juan read.’
- (ii) *Descubrí/recuerdo que cuántos libros habían leído.* (Sp)
 found out /remember that how many books had read
 ‘I found out/remember how many books they read.’

7. Lahiri, who rejects the distinction between proper and improper questions (Lahiri 2002:268), claims that, in Recursive Comp constructions in Spanish, *que* is a quotative marker and only verbs related to speech acts, which select an utterance (not necessarily a CP or a DP), license its occurrence.

2.2 Proper and improper indirect questions in European Portuguese

European Portuguese has lost Recursive Comp in indirect questions: the complementizer *que* ‘that’ may not precede a *wh*-phrase or the complementizer *se* ‘if/whether’, as shown in (14):^{8,9}

- (14) a. *Ele perguntou/inquiriu (*que) quem tinha chegado.* (EP)
 he asked/inquired (*that) who had arrived
 ‘He asked/inquired who had arrived.’
- b. *Ele perguntou/inquiriu (*que) quantos livros leste.* (EP)
 he asked/inquired (*that) how many books read
 ‘He asked/inquired how many books you read.’

However, the core discursive and semantic properties presented by Suñer to distinguish between proper and improper questions hold in this language: while proper indirect interrogatives report a question, improper indirect questions have a declarative status; thus, taking the viewpoint of the subject of the main clause, proper indirect questions may not be conceived as propositions or as exhibiting an unknown variable, while improper indirect questions may.

8. Notice that European Portuguese optionally presents *Recursive Comp* in *wh*-exclamatives, but the *whP* must precede the form of the complementizer *que* (cf. (i)) (cf. Mateus *et al.* 1983:387). *Wh*-exclamatives in Spanish have a similar behavior, as shown in (ii), by Demonte and Soriano (2009):

- (i) *Que livro interessante (que) tu compraste!* (EP)
 which book interesting (that) you bought
 ‘What an interesting book you bought!’
- (ii) *¡Qué rico (que) está!* (Sp)
 How good (that) is
 ‘How good this is!’

9. As noticed in Suñer (1999), in Medieval Portuguese the co-occurrence of *que* followed by a *whP* was possible. The following examples, from Silva Dias, E. (1917/1970:265), show that this happened both in proper indirect questions selected by verbs like *perguntar*, ‘ask’, (i), and in embedded clauses selected by verbs like *pensar*, ‘think’, (ii). This shows that a change has occurred in Portuguese:

- (i) *Perguntaram-lhes as vizinhas que adonde leixara ela o filho.*
 asked them the neighbours that where left she the son
 ‘The neighbours asked where she left her son.’
- (ii) *E pensaba antre ssy que domde averia aquelle moço que era tan formoso.*
 and thought REFL that where would-be that boy who
 was so pretty.
 ‘And he/she thought where this boy who was so pretty would be.’

In addition, in European Portuguese there is a tight correlation between the kind of selecting verbs and the nature of the complementizer of the embedded clause: interrogative verbs, like *perguntar* 'ask' *perguntar-se* 'wonder' or *inquirir* 'inquire', select indirect yes/no questions with the complementizer *se* 'if' and exclude the declarative complementizer *que* 'that', (15). The reverse occurs in improper indirect yes/no questions, where the use of *se* 'if', is severely restricted, (16):

- (15) *Ela perguntou/perguntou-se/ inquiriu {se/*que} a Ana*
 she asked/wondered inquired if/*that the Ana
enfrentava alguma dificuldade. (EP)
 faced any trouble
 'She asked/wondered/inquired {if/*that} Ana faced any trouble.'

- (16) a. *Ela recordou {que/*se} a Ana enfrentava*
 she remembered that/if the Ana faced
alguma dificuldade. (EP)
 some trouble
 'She remembered if Ana faced some trouble.'
- b. *Nós adivinhámos/previmos {que/*se} o barco*
 we guessed/predicted that/if the boat
ia tomar aquela rota. (EP)
 would take that route
 'We guessed/predicted that/*if the boat would take that route.'

Still, the acceptability of some sentences with the latter verbs and a *se* embedded clause slightly improves when this clause overtly exhibits a disjunctive coordination, as in (17). In this case *se* assumes the meaning of 'whether':

- (17) *#Adivinhámos/soubemos se o barco ia tomar aquela*
 guessed/knew whether the boat would take that
rota ou outra. (EP)
 route or another one
 'We guessed/knew whether the boat would take that route.'

Another piece of evidence in favor of the difference between proper and improper indirect questions in European Portuguese comes from polarity item licensing: in (15), in the domain of a question operator, *algum* is interpreted as the polarity item 'any'; on the contrary, in an improper indirect question *algum* exhibits the meaning of 'some', as in (16a), as it is usual in declarative sentences.¹⁰

10. Although Lahiri (2002) disregards the distinction between proper and improper interrogatives, he claims that epistemic predicates disallow polarity items, unless they

Considering the data presented by Suñer, European Portuguese seems to crucially differ from Spanish with respect to the occurrence of *si* in improper indirect questions. Yet, this is an area subject to some linguistic variation in Spanish. Most native speakers do not freely allow the occurrence of this complementizer in clauses selected by verbs like *descubrió* ‘discover/found out’ or *recordó* ‘to remember’ (see (18)). They only accept *si* ‘if/whether’ with these verbs when they constitute the predicate of a direct question, (19), or in sentences where a disjunctive reading may be retrieved, and the assertive reading of the selecting predicate is mitigated by the occurrence of the future tense (20):¹¹

- (18) a. **Ella descubrió si María tenía algún problema.* (Sp)
 she discovered if María had some problem
 ‘She discovered whether María had some problem.’
- b. **Ella recordó si María tenía algún problema.*
 she remembered if María had some problem
 ‘She remembered whether María had some problem.’
- (19) Q: *¿Ella descubrió si María tenía algún problema?*
 she discovered if María had any problem?
 ‘Did she discover if María had any problem?’
- A: *No, no lo descubrió.* (Sp)
 no, not it discovered
 No, she did not.
- (20) *Ella recordará si María tenía algún problema.* (Sp)
 she will remember if María had any problem
 ‘She will remember whether María had any problem.’

As we will see in the next section, most of these restrictions also apply to European Portuguese. Furthermore, in some of these contexts, we believe that the elements that favor the occurrence of the complementizer *si* ‘se’ constitute a clue for the reinterpretation of these embedded clauses as proper indirect questions.

In sum, European Portuguese supports the distinction between proper and improper indirect questions. According to the judgments of some Spanish speakers, we must conclude that, apart from the Recursive Comp phenomenon, proper and improper indirect questions in Spanish and European Portuguese present quite a similar behavior.

are independently licensed, while several predicates like *wonder* or *ask* license them (Lahiri 2002:258).

11. We thank the anonymous reviewer who made us aware of these facts.

3. Predicate selection and the alternation between improper indirect questions and DPs containing a restrictive relative

In this section we will discuss the properties of the verbs that license the alternation between improper indirect questions and DPs containing a restrictive relative. As Section 2 has already made clear, the distinction between proper and improper indirect questions mostly relies on the nature of the selecting predicates; thus, in Section 3.1 we will sketch the classes of predicates that select each one of these embedded clauses. In Section 3.2 we will analyze the properties of the verbs that allow for the alternation between improper indirect clauses and DPs containing a restrictive relative.

3.1 Predicate selection of proper and improper indirect questions

Plann (1982) and Suñer (1993, 1999) take a strict view of the predicates that select proper questions, claiming that only communication verbs that may quote a direct question can select a proper indirect question, thus restricting this class to predicates with an inquiring content, like *preguntar*, ‘ask’ or *inquirir*, ‘inquire’ (as classically assumed). However, the examples in (21) favor the inclusion of verbs expressing lack of knowledge (Dayal & Grimshaw 2009) in the list of predicates that select yes / no indirect questions:

- (21) a. *Ela ignora/ desconhece/ não sabe/ esqueceu-se/ não se*
 she ignores/ not_knows/ not knows/ forgot- REFL/ not REFL
lembra se o João leu o livro. (EP)
 remembers if the João read the book
 ‘She ignores/does not know/forgot/ does not remember if John read the book.’
- b. *Ela ignora/ desconhece/ não sabe/ esqueceu-se/ não se*
 she ignores/ not_knows/ not knows forgot- REFL/ not REFL
lembra que livro ele leu. (EP)
 remembers which book he read
 ‘She ignores/does not know/forgot/ does not remember which book he read.’

It is true that they differ from inquiring verbs by not allowing direct question quotes (cf. (22a) vs. (22b)):

- (22) a. *Ela perguntou/inquiriu/interrogou-se: Que livro*
 she asked/inquired/wondered: Which book
comprou a Maria? (EP)
 bought the Mary?
 ‘She asked/inquired/wondered: Which book did Maria buy?’

- b. **Ela ignora/ desconhece/ não sabe: Que livro*
 she ignores/ not_knows/ not knows: Which book
comprou a Maria? (EP)
 bought the Maria?
 ‘She ignores/does not know: Which book did Maria buy?’

However, like proper interrogative predicates, these verbs select embedded sentences that do not have a truth value (21a) or exhibit a variable whose value is unknown by the matrix subject (21b). Therefore, these predicates have paraphrases that deny the subject’s knowledge of some entity in the subordinate clause, (23a), or the truth value of the embedded proposition, (23b); they freely accept subordinate sentences headed by the complementizer *se* ‘if’, (23b); and they exhibit the polarity indefinite *algum* with the value of ‘any’, (23b).

- (23) a. *Ela ignora/ desconhece/ não sabe a resposta à questão:*
 she ignores/ not_knows/ not knows the answer to the question:
Que livro comprou a Maria? (EP)
 which book bought the Maria?
 ‘She ignores/does not know the answer to the question: Which book did Maria buy?’
- b. *Ela ignora/desconhece/não sabe se a Maria*
 she ignores/not_knows/ not knows if the Mary
comprou algum livro. (EP)
 bought any book
 ‘She ignores/does not know if Mary bought any book.’

So, we take predicates expressing lack of knowledge as interrogative clause selectors. Notice that among these predicates we include the negative counterparts of the verb *saber* ‘know’, which in its positive form selects a declarative embedded clause introduced by *que* ‘that’ (cf. (24)), both as a single lexical item, *desconhecer* ‘not to know’, or as syntactic unit, *não saber* ‘not to know’.

- (24) *Ele sabe/esqueceu-se que/*se o carro já está arranjado.* (EP)
 he knows/forgot-REFL that/if the car already is fixed
 ‘He knows/forgot that/*if the car is already fixed.’

Similarly, we assume that certain predicates (e.g. *dizer* ‘to say’, *ouvir* ‘to hear’), which usually select declarative CPs headed by the complementizer *que* ‘that’ (excluding the complementizer *se* ‘if’), (24), may license proper indirect questions when they are under the scope of an interrogative force operator (i.e. when they are the predicate of a direct question), (25):¹²

12. The same view is taken for English and other languages by Adger and Quer (2001), considering that there is a set of contexts where the oddness of an *if*-clause embedded under a

- (25) a. *Ele sabe/disse/ouviu se o carro já*
 he knows/said/headed if the car already
está arranjado? (EP)
 is fixed
 ‘Did he know/say/hear if the car is already fixed?’
- b. *Ela disse quem vem hoje buscar a menina?* (EP)
 she said who comes today pick up the child
 ‘Did she say who will pick up the child today?’
- (26) *Ele quis saber se a televisão transmitia o*
 He wanted to know if the television broadcast the
jogo de futebol. (EP)
 game of football
 ‘He wanted to know if the television was broadcasting the football game.’

Thus, a classification of the predicates that select proper and improper indirect questions must take into account not only the verb in itself, but also the operators that have scope over it (e.g. negation, interrogative illocutionary force and modality) and change its meaning.¹³ So, we propose in (27) a non-exhaustive list of predicates that can select proper indirect questions in European Portuguese:

- (27) Predicates that select proper indirect questions
- a. Predicates of communication with an interrogative content:
perguntar ‘ask’, *inquirir* ‘inquire’, *interrogar-se* ‘wonder’.
 - b. Predicates expressing lack of knowledge:
ignorar ‘ignore’, *desconhecer/não saber* ‘not to know’, *esquecer* ‘forget’,
não recordar ‘not to remember’.

declarative selector predicate disappears. It is the case of yes / no questions and negation: *Did Julie admit / hear / say if the bartender was happy?* (yes / no question) *Was it obvious if the bartender was happy?* (yes / no question), *Julie didn’t admit / hear / say if the bartender was happy* (negation), *It wasn’t obvious / clear if the bartender was happy* (negation). According to these authors, what we have here are cases of *unselected embedded questions* (UEQ). The exploration of the syntactic and semantic behavior of this sort of constructions justifies, according to the authors, an analysis where there is a projection above CP in UEQ that behaves like a DP. It seems that Basque presents empirical arguments in favor of this DP layer, because the complementizer used in this kind of contexts is some sort of polar determiner, (*e*)*nik* (*en*= C and *ik*= partitive). In Portuguese, there is no clear evidence for the DP nature of the complement selected by verbs like *dizer*, *admitir*, *ouvir*, even when they are related to disjunction and followed by *se* and we will continue to analyze these complements as CP/ForceP (see Section 4).

13. At this point we depart from Suñer (1999:2170–2172) that takes negation and modality (including the illocutionary force of the main clause) as insufficient to change the semantic type of the predicate. She argues for her proposal mainly on the basis of the Recursive Comp phenomenon.

- c. Predicates of saying and perception under the scope of a negative element (e.g. *dizer* ‘say’, *admitir*, ‘admit’, *ver*, ‘see’), or under the scope of a question operator (e.g. *dizer* ‘say’, *ver*, ‘see’) or predicates of retention of knowledge (cf. Karttunen 1977) under the scope of modal verbs, like *querer* (e.g. *saber* ‘know’).¹⁴

In sum, proper indirect yes/no questions are not exclusively restricted to the selection context of an inquiring predicate; they may also be selected by predicates that express lack of knowledge and even by verbs that usually select declarative CPs introduced by *que*, when these occur in contexts that remove the declarative value of the embedded clause.

In contrast, improper indirect questions are selected by predicates that take as argument a declarative embedded clause with an assigned truth value. Based on the designations proposed in Karttunen’s (1977) inventory of predicates that select indirect questions and on Suñer’s (1999) work for Spanish, we propose, in (28), a non-exhaustive list of verbs that license improper indirect questions in European Portuguese.¹⁵

14. We will postpone for a future work the study of verbs that take an embedded clause with the complementizer *se* ‘if’ in disjunctive coordination, but that become marginal when this reading may not be retrieved (i):

- (i) *Ele disse se o jogador ficava no Clube ??(ou não).* (EP)
 he said if the player stayed in the Club(or not)
 ‘He said whether the player stayed in the Club ??(or not).’

In fact, the availability of an embedded disjunctive coordination is not enough to turn a predicate into an indirect question selector. Thus, for instance, *admitir* ‘admit’, which may be interpreted as an indirect question selecting predicate when it is denied (cf. (ii)), does not produce acceptable results when it selects a disjunctive coordinate sentence headed by the complementizer *se* ‘if/whether’, as shown in (iii):

- (ii) *Ele não admitiu / recusou-se a admitir se o jogador ficava*
 he not admitted/ refuse to admit if the player stayed
no Clube. (EP)
 in the Club
- (iii) **Ele admitiu se o jogador ficava no Clube ou não.* (EP)
 he admitted whether the player stayed in the Club or not.

15. A reviewer suggested that we could adopt the predicate classification of Lahiri (2002: 287), which we transcribe in this footnote. Lahiri claims that there are two main classes of predicates that take interrogative complements: (i) Rogative predicates: *wonder, ask, depend on, investigate, examine, etc.* and (ii) Responsive predicates, which subdivided into two subclasses: (ii.a) Veridical-responsive predicates: *know, remember, forget, be aware, tell, communicate, be surprised, etc.* and (ii.b) Non-veridical responsive predicates: *be certain (about), conjecture*

- (28) Predicates that select improper indirect questions
- a. Predicates of acquisition, retention or loss of knowledge:
saber ‘know’, *descobrir* ‘find out/discover’, *reparar* ‘notice’, *ver* ‘see’,
lembrar ‘remember’, *esquecer* ‘forget.’
 - b. Predicates of conjecture:
adivinhar ‘guess’, *prever* ‘predict.’
 - c. Predicates of communication
revelar ‘revel’, *explicar* ‘explain.’

What all these predicates seem to have in common is the fact that they typically presuppose the truth of the embedded proposition and, hence, present a factive interpretation, as illustrated by the contrasts in acceptability in (29) and (30):¹⁶

- (29) *Ele sabia/ descobriu/ reparou/ viu/ advinhou/ previu/ revelou/*
he knew/ found out/ noticed/ saw/ guessed/ predicted/ revealed/
explicou que estava a chover. (EP)
explained that was to rain

‘He knew/found out/noticed/guessed/predicted/revealed/ explained that it was raining.’

Presupposition: it was raining.

- (30) #*Ele sabia/ descobriu/ reparou/ viu/ advinhou/ previu/ revelou/*
he knew/ found out/ noticed/ saw/ guessed/ predicted/ revealed/
explicou que estava a chover, mas não estava. (EP)
explained that was to rain, but not was

‘#He knew/found out/noticed/saw/guessed/predicted/revealed/ explained that it was raining, but it was not.’

For the most part, these predicates fit into the Class E of Hooper and Thompson’s (1973) classification (see Table 1), which ranges the semi factive-predicates, i.e. predicates that are basically factives but lose their factivity in certain contexts, namely in questions and conditionals (cf. (31)): ¹⁷

(*about*), *agree* (*on*). We will not, however, follow this suggestion, since Responsive predicates are usually classified as verbs that canonically take embedded declarative clauses.

16. Suñer (1993) claim these verbs mainly select declarative clauses, but in certain circumstances they may also select embedded questions; thus, they are [$\pm wh$, $+/Qu$]. From this point of view her classification is not especially enlightening. Furthermore, Suñer’s classification says nothing about the assertive or factive properties of these verbs.

17. This designation is due to Karttunen (1971), developing Kiparsky and Kiparsky (1971).

- (31) *Se ele descobrir que está a chover, ele avisa-nos.* (EP)
 if he finds out that is to rain, he let know us
 ‘If he finds out that it is raining, he will let us know.’

Table 1.

Non-factive predicates			Factive predicates	
A	B	C	D	E
<i>Strongly assertive predicates</i> ¹⁸	<i>Weakly assertive predicates</i>	<i>Non-assertive predicates</i>	<i>Factive predicates</i>	<i>Semi-factive predicates</i>
say, report, exclaim, assert, claim, be true, be certain, be sure, be obvious	suppose, believe, think, expect, guess, imagine, it seems, it happens, it appears	be (un)likely, be (im)possible, be (im)probable, doubt, deny,	resent, regret, be sorry, be surprised, bother, be odd, be strange, be interesting,	realize, learn, discover, know, see, recognize

Hooper & Thompson (1973).

Notice that in Hooper and Thompson’s (1973:480) typology, *guess*, which corresponds to European Portuguese *prever* or *adivinhar*, is included in the class of *weakly assertive predicates* (see B). Still, these predicates may have a factive reading, selecting declarative CPs, whose truth value is presupposed by the matrix subject (cf. (29) vs. (30)), despite also allowing for an assertive interpretation (at least, regarding *prever* ‘guess/predict’: *Ele previu que ia chover, mas enganou-se*. ‘He predicted/guessed that it would rain, but he was wrong.’). Nevertheless, Hooper and Thompson’s classification cannot capture this fact, since it takes assertive and factive features as being opposed to each other (see lists B and E).

Recent work presents alternative proposals that permit to account for the data. These approaches do not take factivity as a primitive feature; instead they assume that it may be explained in terms of referentiality (de Cuba & Ürögdi 2009; de Cuba & MacDonald 2011; Haegeman & Ürögdi 2010; Hinzen & Sheehan 2011).

Developing this approach, Hinzen and Sheehan (2011) propose a typology based on the features: (i) assertive/non-assertive; (ii) communication/cognitive/other;¹⁹ (iii) definite /indefinite – (see Table 2):

18. The notion of assertion is not defined by these authors in an absolute way, but nevertheless it is “identified as that part which can be negated or questioned by the usual application of the processes of negation and interrogation” (Hooper & Thompson (1973:473). See also Heycock (2006).

19. The feature *cognitive* is related to acquisition, retention, loss or lack of knowledge.

Table 2.

I	II	III	IV	V	VI
<i>Strongly assertive communication definite predicates (semi-factives)</i>	<i>Strongly assertive communication indefinite predicates (non factives)</i>	<i>Weakly assertive cognitive definite predicates (semi-factives)</i>	<i>Weakly assertive cognitive indefinite predicates (non-factives)</i>	<i>Non-assertive definite predicates (emotive factives)</i>	<i>Indefinite predicates (non-assertive)</i>
disclose, divulge, confess, point out, reveal.	say, claim, assert, report, vow.	know, discover, find out, forget, realize, grasp.	think, believe, suppose, guess, ²⁰ imagine, prove, decide.	regret, deplore, resent, detest, hate, be glad, be aware, care, mind.	doubt, (deny), be possible, be likely, wish, want, order, ask.

Hinzen & Sheehan (2011).

In this classification, the assertive nature of a predicate is not incompatible with its factive status. In addition, this typology distinguishes between predicates with a cognitive meaning and those that mainly present a communicative interpretation.

Correlating these classes with the nature of the complements they select, we conclude that improper indirect questions in European Portuguese are declarative sentences selected by *weakly assertive cognitive definite predicates* (class III) and by *strongly assertive communication predicates* (class I). Thus, these embedded clauses present assertive and (semi) factive properties and may present a cognitive or a communicative meaning.

Notice that this classification also intends to account for the properties shared by CPs and DPs selected by these subclasses of predicates; we will explore this issue in the next section, regarding the alternation between improper indirect questions and DPs containing a restrictive relative.

3.2 Verbs that allow for the alternation improper indirect questions and DPs containing a restrictive relative

The verbs that license the alternation between improper indirect questions and DPs containing a restrictive relative mainly present a cognitive meaning (cf. (32) and (33)):

- (32) a. *Ela sabia/ descobriu/ recordou quantos livros havia*
 she knew/ discovered / remembered how many books there were
na biblioteca. (EP)
 in the library
 ‘She knew/ discovered/remembered how many books there were in the library.’

20. As we saw, *adivinhar* ‘guess’ in European Portuguese behaves like a semi-factive verb.

- b. *Nós adivinhámos/previmos que rota o barco*
 we guessed/predicted which route the boat
ia tomar. (EP)
 would take
 ‘We guessed/predicted/remembered which route the boat would take.’
- (33) a. *Ela descobriu/ recordou a quantidade de livros que*
 she discovered / remembered the amount of books that
havia na biblioteca. (EP)
 there were in the library
 ‘She discovered/remembered the amount of books that existed in the library.’
- b. *Nós adivinhámos/ previmos a rota que o barco*
 we guessed/ predicted the route that the boat
ia tomar. (EP)
 would take

As for verbs with a communicative meaning, which also select improper indirect questions, they do not allow restrictive relatives so easily, unless they assume the sense of making clear some hidden (e.g. *revelar* ‘reveal’), or not fully understood knowledge (*explicar*, ‘explain’), (34):

- (34) a. *Ele revelou/ explicou que dificuldades teria de enfrentar.*
 he revealed/ explained which troubles had to face
 ‘He revealed/explained which troubles he had to face.’
- b. *Ele revelou/ explicou as dificuldades que teria*
 he revealed/ explained the troubles that had
de enfrentar. (EP)
 to face
 ‘He revealed/explained the troubles he had to face.’

Notice that the verbs that denote lack of knowledge – which we have included, in Section 2.1, in the class of proper indirect interrogatives selectors when they license embedded sentences with no assigned truth value or present an unknown variable –, may also allow for the alternation of its clausal complement with a DPs containing a restrictive relative, as (35)–(36) illustrate.

- (35) *Ele ignorava/ desconhecia que dificuldades*
 he ignored/ not knew which troubles
teria de enfrentar. (EP)
 he would have to face
 ‘He ignored/did not know which troubles he would have to face.’

- (36) *He ignorava/ desconhecia as dificuldades que*
 he ignored/ not knew the troubles that
teria de enfrentar. (EP)
 would have to face
 'He ignored/did not know the troubles he would have to face.'

However, these verbs have declarative counterparts with a factive value, as shown by the unacceptability of the adversative clause in (37):

- (37) *Ele ignorava/não sabia que teria de enfrentar*
 he ignored/not knew that would have to face
várias dificuldades (#mas não teve). (EP)
 several troubles but not had
 'He ignored/did not know that he would have to face several troubles (but he did not have to).'

Thus, we assume that when these verbs license this alternation, they exhibit a factive reading, and introduce indirect questions otherwise. That is to say, predicates like *ignorar* 'ignore', *desconhecer* 'not to know', are intrinsically semi-factives, and, hence, allow both readings: a factive reading and a non-factive one.²¹

In sum, among the verbs that allow improper indirect questions, only those that denote cognitive content (acquisition, retention, clarification, loss or lack of knowledge) license the alternation between improper indirect questions and DPs containing restrictive relatives.

Once again, Hinzen and Sheehan (2011) present a proposal that, in great measure, accounts for this CP/DP alternation. These authors explore the similarities between the nominal and the sentence levels. In the nominal level, in order to refer to an entity, we use quantified expressions, definite descriptions or deictic expressions, proper names and pronouns. In the sentence level there are different possibilities for expressing a situation: propositions, facts and truths. The authors conclude that there is a similar scale of referentiality in the nominal and the sentence domains.

Exploring this parallelism, they propose that the feature definite/indefinite, classically used just for the nominal domain, may enter in the classification of sentential complements, CP (see table 2, above). When the CP is quantificational, it yields an indefinite/intensional interpretation, as in (38), where the complement clauses do not

21. This possibly explains why there is some disagreement in the literature about the class of the English and Spanish equivalents of *desconhecer* 'not to know' as proper or improper interrogative verbs.

have a referential value and are not synonyms, because they have an open truth value, equivalent to a non-specific indefinite, whose existence is left open:

- (38) a. Lois Lane thinks (that) Superman is a superhero.
b. Lois Lane doubts (that) Clark Kent is a superhero.

In contrast, in matrix sentences like (39), which have the same truth value and are interchangeable, the sentences present an interpretation similar to rigid reference:

- (39) a. Superman is a superhero.
b. Clark Kent is a superhero.

The intermediate case is constituted by factive embedded clauses, which are presupposed as true (40). According to the authors, complement clauses selected by factive verbs are equivalent to a definite expression, which is not surprising, considering the possibility of being paraphrased by *the fact (...)*.

- (40) He regrets that it is raining.

The case of factives is especially relevant for our analysis. In fact, adopting Hinzen and Sheehan's typology, all the verbs that select improper indirect questions and DP modified by a restrictive relative exhibit the same feature combination, i.e. they are *weakly assertive cognitive definite predicates (semi-factives)*.²²

That the feature definite is crucial not only in improper indirect questions but also in this type of relative clauses is confirmed by the following data: only (41c) and (42c) are adequate paraphrases of (41a) and (42a), respectively:

- (41) a. *Ela descobriu quantos livros havia na biblioteca.* (EP)
she found out how many books there were in the library
'She found out how many books there were in the library.'
b. *#Ela descobriu uma quantidade de livros que*
she found out a quantity of books that
havia na biblioteca.
there were in the library
'She found out a quantity of books that there were in the library.'

22. Being cognitive predicates, they seem to impose some restrictions on the DP complements they select. Apparently these DPs preferentially refer to an entity that results from a process of acquisition or retention of knowledge:

- (i) *Eu sei/descobri/adivinhei o caminho/a verdade.* (EP)
'I know/found out/guessed the way/the truth'
(ii) *Eu *sei/#descobri/*adivinhei o rapaz.* (EP)
'I know / found out / guessed the boy'

- c. *Ela descobriu a quantidade de livros que havia*
 she found out the quantity of books that there were
na biblioteca.
 in the library
 ‘She found out the quantity of books that there were in the library.’
- (42) a. *Nós adivinhámos que opções o capitão ia tomar.*
 we guessed which options the captain would take
 ‘We guessed which options the captain would take.’
- b. **Nós adivinhámos umas opções que o capitão ia tomar.*
 we guessed some options that the captain would take
 ‘We guessed some options that the captain would take.’
- c. *Nós adivinhámos as opções que o capitão ia tomar.*
 we guessed the options that the captain would take
 ‘We guessed the options that the captain would take.’

These data confirm that the alternation under analysis involve CPs and DPs with a high degree of referentiality. In Section 4 we will account for this property in terms of the type of structure that these DPs and CPs exhibit.

Considering the alternation between improper indirect questions and DP containing restrictive relatives, we could raise the hypothesis that these DPs were a kind of concealed questions (Baker 1968; Suñer 1999; Romero 2005; Frana 2006, a.o.). In fact European Portuguese, as other languages, exhibits this phenomenon with verbs that select proper and improper indirect questions (cf. (43b), (44b)):²³

- (43) a. *Eles perguntaram que horas eram.* (EP)
 they asked which hours were.
 ‘They asked what time it was.’
- b. *Eles perguntaram as horas.* (EP)
 they asked the hours
 ‘They asked the time.’

23. The examples in (i) and (ii), from Suñer, attest the existence of what she calls proper and improper concealed questions in Spanish (Suñer 1999:2174–2178):

- (i) *Le preguntó su dirección.*
 him_{dative} asked his address
 ‘He/she asked him his/her address.’
- cf. *Le preguntó (que) cuál era su dirección.* (Sp)
 him_{dative} asked (that) which was his/her address
 ‘He/she asked him which his/her address was.’

- (44) a. *Eles revelaram/anunciaram quem/que pessoa*
 they revealed/announced who/which person
tinha vencido o concurso. (EP)
 had won the contest
 ‘They revealed/announced who won the contest.’
- b. *Eles revelaram/anunciaram o vencedor do concurso.*
 they revealed /announced the winner of the contest
 ‘They revealed/announced the winner of the contest.’

Notice, however, that not all the verbs that license concealed questions also license DPs including restrictive relatives (45) and not all the verbs that license improper indirect questions (cf. (46a)) find adequate correlates in concealed questions in European Portuguese (cf. (46b)).

- (45) **Eles perguntaram as horas que eram.* (EP)
 they asked the hours that were
- (46) a. *Eles sabiam que pessoa tinha vencido o concurso.* (EP)
 they knew which person had won the contest
 ‘They guessed who had won the contest.’
- b. **Eles sabiam o vencedor do concurso.* (EP)
 they knew winner of the contest

In sum, there is no full overlapping between the verbs that license the alternation between improper indirect questions and those that take concealed questions (across languages). The study of this construction is, thus, behind the aims of the current paper.

4. A syntactic modular approach to improper indirect questions and restrictive relatives

Although most properties of the sentences that participate in the alternation between improper indirect questions and DPs containing restrictive relatives are related to the

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- (ii) *Sabía su dirección.*
 knew his/her address
 ‘I / he / she knew his/her address.’
 cf. *Sabía cuál era su dirección.*
 knew which was his/her address
 ‘I / he / she knew which his/her address was.’

- b. *Me preguntaron que si había vuelto de Barcelona.* (Sp)
 me asked that if had returned from Barcelona
 ‘They asked me if I had come back from Barcelona.’

Demonte and Soriano assume that some verbs (e.g. *preguntar* ‘ask’) contrast with others (e.g. *explicar* ‘explain’) by selecting a more articulated CP system. In this expanded CP, a declarative complementizer, *que*, is merged in Force and may co-occur with a *wh*-phrase, internally merged in FocP, or with *si*, merged in Int:²⁴

- (51) a. *Me preguntó [ForceP que ... [FocP qué ... [FinP ... quería ...*
 (for (50a))
 b. *Me preguntaron [ForceP que ... [IntP si ... [FinP ... había vuelto ...*
 (for (50b))

Turning now to contemporary European Portuguese, as we have seen in Section 2.2, a property distinguishes this language from Spanish: the unavailability of the co-occurrence of *que* ‘that’ with the complementizer *se* ‘if’ (cf. (46a)) or with a *wh*P (cf. (46b)):²⁵

- (52) a. *Ele perguntou (*que) se o João sabe alguma coisa.* (EP)
 he asked that if the John knows something
 ‘He asked if John knows anything.’
 b. *Ele perguntou (*que) o que o João sabe.* (EP)
 he asked that what the John knows
 ‘He asked what John knows.’

24. De Cuba and MacDonald (2011) proposed an explanation for the *Recursive Comp* phenomenon, based on referentiality. They claimed that there are always two instances of CP, the higher CP is non-referential and the lower one is referential. Like Rivero (1980, 1994), Plann (1982), Lahiri (2002), they assume that only verbs that license a direct quotation allow an extra *que* ‘that’. Notice that, in this work, the possibility of analyzing the CP system in terms of Rizzi’s framework is left open.

25. The analysis here adopted of root and embedded *wh*-questions differs from the one proposed by Barbosa (2001) for EP. Accepting Rizzi’s work and the articulated structure of CP (Rizzi 1997), Barbosa argues that the crucial property that distinguishes Romance from Germanic languages is that a *wh* Infl does not need to raise up to C; so the *wh*-Criterion can be checked against the highest Infl head in all Romance languages and the *wh*-feature may be located in Infl. According to this view, a *wh* interrogative constituent may be dislocated to Spec of IP and not necessarily to the Spec of CP in root sentences (*Quando chegou a Maria?* ‘When did Mary arrive?’) and in embedded clauses (*Sabes quando chegou a Maria?* ‘Do you know when Mary arrived?’). In addition, in a topicalized sentence (*Sabes, a que horas, ao Pedro, mais lhe convirá ir lá* ‘Do you know what time will be more convenient for Peter to go there?’), Barbosa proposes that clausal projections are bare IPs, unless further structure is independently required. Although this framework allows Barbosa to draw a description of *wh*-questions in Romance relating them with Subject Inversion, Null vs. Non-null subject languages and other phenomena, it seems to us that the general intuition, captured in classical

We claim that what prevents *que* ‘that’ to precede *se* ‘if’ in European Portuguese indirect questions is the lack of the functional category *Int*. As a consequence, the complementizers *que* ‘that’ and *se* ‘if’ compete for the same functional category, Force. This, in turn, also shows that, in indirect question contexts, both complementizers have illocutionary force features in European Portuguese: *que*, declarative features (53a) and *se*, interrogative features (53b):

- (53) a. Ele disse [_{ForceP} [que +decl] [_{FinP} <+finite>
 he said that
 [ela comprou esses livros]]]
 she bought those books
- b. Pergunto [_{ForceP} [se +int] ... [_{FinP} <+finite>
 (I) ask if
 [ela comprou esses livros]]]
 she bought those books

The non selection of *Int* in European Portuguese is corroborated by the inexistence in this language of the counterparts of (49), in Italian. In embedded sentences, the declarative and the interrogative complementizers in European Portuguese behave alike: they always precede a topicalized constituent, as shown in (54) and (55):²⁶

analyses, that wh questions involve CP/ForceP structures, with <interrogative> and <wh> features> is lost here. We leave the discussion of Barbosa’s analysis for future research.

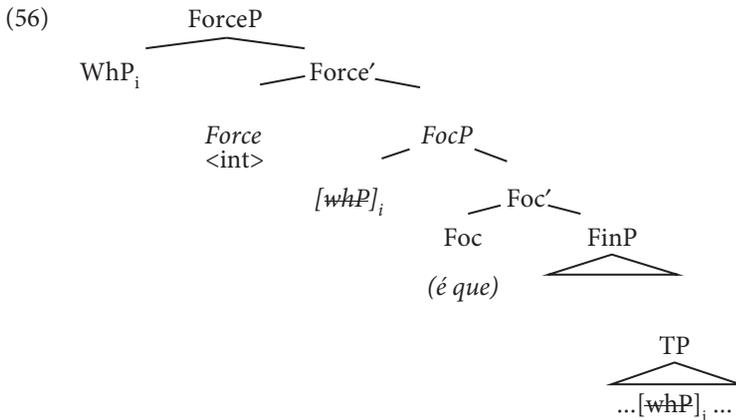
26. As a reviewer remarked, although sentences like (55) are acceptable in Spanish (cf. (i)–(ii)), the same contrasts hold in this language in sentences like (54) (cf. (iii) vs. (iv)):

- (i) No sé si, a Juan, le podríamos haber dicho la verdad. (Sp)
 not know if, to Juan, him could have said the truth
 ‘I do not know if, to Juan, we could tell the truth.’
- (ii) No sé, a Juan, si le podríamos haber dicho la verdad. (Sp)
 not know, a Juan, if him could have said the truth
- (iii) Sé que, a Juan, le podemos decir la verdad. (Sp)
 know that, to Juan, him can say the truth
 ‘I know that, to Juan, we can tell the truth.’
- (iv) *Sé, a Juan, que le podemos decir la verdad. (Sp)
 know, to Juan, that him can say the truth

Notice that in (i)–(ii), *saber* ‘know’ is under the scope of a negative marker, while in (iii)–(iv) it is not. It is in the latter case that Top may only project at the right of the complementizer. We take these contrasts as evidence that *saber* ‘know’ and *no saber* ‘not to know’ act as distinct predicates: while the former licenses improper indirect questions and excludes Recursive Comp (cf. (iii)–(iv)), the latter selects proper indirect questions and allows a covert Recursive Comp (cf. (i)–(ii)). In other words, Spanish selects *Int*, as distinct from Force, only in proper indirect questions.

- (54) a. *Sei que, ao João, podemos dizer a verdade.* (EP)
 know that, to the João, can tell the truth
 'I know that, to João, we can tell the truth.'
- b. **Sei, ao João, que podemos dizer a verdade.* (EP)
 know, to the João, that can tell the truth
- (55) a. **Não sei, ao João, se podemos dizer a verdade.* (EP)
 don't know, to the João, if can tell the truth
- b. *Não sei se, ao João, podemos dizer a verdade.* (EP)
 don't know if, to the João, can tell the truth
 'I don't know if, to João, we can tell the truth.'

Given that, in European Portuguese, Force is the sole locus for illocutionary force, the ban of the declarative complementizer *que* 'that' in indirect questions also finds an explanation. Thus, we propose the representation (56) for indirect questions in this language:



In (56), the *whP* occupies Spec of *ForceP*, possibly due to the EPP-feature of *Force*, *FocP* is projected and its head may be filled by *é que*, as in (57)²⁷:

- (57) *Eu perguntei que livro é que a Maria leu.* (EP)
 I asked which book FOC the Mary read
 'I asked which book Maria read.'

27. We are assuming, with Ambar (1992, 1999) and Duarte (2000), that *é que* is a focalizing expression both in questions and in declarative clauses. Costa and Lobo (2009) analyze cleft sentences with *é que* 'FOC' as a single clause and claim that *é que* lexicalizes C or another functional category in the left periphery of the sentence.

Accepting this approach, improper indirect questions in European Portuguese appear as unproblematic: the main syntactic property that distinguishes them from proper indirect questions is their declarative illocutionary force, as illustrated in (59) for a sentence like (58):

(58) *Eu descobri que livro (é que) tu leste.* (EP)
 I found out which book (Foc) you read
 'I found out which book you read.'

(59) [ForceP WhP wh_i [Force <declarative>] [FocP [Foc] [FinP [TP tu leste_i]]]]

In sum, by adopting the modular approach proposed in Rizzi (2004b), it is possible to account for the main syntactic differences between proper and improper indirect questions in Spanish and in European Portuguese: Spanish allows the presence of the complementizer *que* 'that' preceding wh-questions, because Force and Int are both projected; this co-occurrence is lost in Contemporary European Portuguese; therefore, only Force hosts the illocutionary force features, be they declarative or interrogative. Consequently, *que* 'that' is excluded from both proper and improper indirect questions in this language.

4.2 The alternation between improper indirect questions and restrictive relatives

As we saw before, improper indirect questions alternate with restrictive relatives when selected by *weakly assertive cognitive definite predicates (semi-factives)*, according to Hinzen and Sheehan's typology:

- (60) a. *Nós descobrimos que dificuldades teremos de enfrentar.* (EP)
 we found out which difficulties will have to face
 'We discovered which kind of difficulties we will have to face.'
- b. *Nós descobrimos as dificuldades que teremos de enfrentar.* (EP)
 we found out the difficulties that will have to face
 'We discovered the difficulties we will have to face.'

However, closer inspection reveals that restrictive relatives and improper indirect wh-questions exhibit a distinct behavior. Firstly, in contrast with improper indirect wh-questions, restrictive relatives are not limited to the selection domains of *weakly assertive cognitive definite predicates* (cf. (61) vs. (62)):

- (61) *Eu encomendei/ comprei/ li o livro que tu escreveste.* (EP)
 I ordered/ bought/ read the book that you wrote
 'I ordered/bought/read the book you wrote.'

- (62) **Eu encomendei/ comprei/ li que livro tu escreveste.* (EP)
I ordered/ bought/ read which book you wrote

Secondly, relative clauses differ from improper indirect wh-questions because they exclude the focalizing expression *é que* (cf. (63) vs. (64)):

- (63) **Eu descobri o livro que é que a Maria leu.* (EP)
I discovered the book that FOC the Mary read

- (64) *Eu descobri que livro é que a Maria leu.* (EP)
I discovered which book FOC the Mary read
'I discovered which book Mary read.'

Finally, relative clauses differ from embedded improper wh questions²⁸, because they do not allow multiple wh-phrases (see (65) vs. (66)):

- (65) **Eu encontrei a rapariga que deu o quê a quem.* (EP)
I found/met the girl that gave the what to whom
'I found/met the girl that gave what to whom.'

- (66) *Eu descobri/ sei que rapariga deu o quê a quem.* (EP)
I found out/ know which girl gave the what to whom
'I found out / know which girl gave what to whom.'

We claim that these contrasts must be ascribed to structural properties of relative clauses. As for the free occurrence of restrictive relatives, in contrast with improper indirect wh-questions, we impute this different behavior to the fact that relative clauses are embedded inside a DP, a category that may occur in a wider range of contexts.

In fact, current approaches to restrictive relatives, despite their divergences, agree in including the relative clause inside a DP: the adjunction analysis assumes that the relative CP is pair merged with a base generated DP/NP (e.g. Ross 1967; Brito 1991), the raising analysis claims that the relative CP is selected by D and an NP raises from inside this CP and merges into the Specifier of CP (e.g. Vergnaud 1974; Kayne 1994; Bianchi 1999).²⁹

28. Notice that multiple-wh phrases are also possible in proper indirect wh-questions in European Portuguese:

- (i) *Ele perguntou quem deu o quê a quem.* (EP)
he asked who gave the what to whom
'He asked who gave what to whom.'

29. The Raising analysis follows an old intuition about the relation between D and CP (e.g. Chomsky 1965, a.o.); however, it presents some problems. Two major problems of this

Adopting a raising analysis, we propose the simplified representation in (68) for the sentence in (67):

- (67) *Eu encomendei o livro que tu leste.*
 I ordered the book that you read
 ‘I ordered the book that you read.’

- (68) $[_{DP} \text{ } \emptyset \text{ } [_{\text{ForceP}} \text{ } \emptyset_{wh} \text{ } \text{livro}_i \text{ } [_{\text{Force}} \text{ } \text{que} \text{ } \langle +\text{declarative} \rangle] \text{ } [_{\text{FinP}} \text{ } \langle +\text{finite} \rangle] \text{ } [_{\text{TP}} \text{ } \text{tu} \text{ } \text{leste} \text{ } \emptyset_{wh} \text{ } \text{livro}_i]]]]]$

The representation in (68) accounts for the second distinguishing property between restrictive relatives and improper wh-questions. In (68) *que* ‘that’ instantiates Force and no FocP is projected. Due to its intrinsic content as a complementizer, *que* ‘that’ may not be focalized. Similarly, the NP-raised into Specifier of ForceP may not also be focalized, because it is discursively interpreted as part of the so called relative clause antecedent, i.e. as given information, not as new contrastive information (i.e. contrastive focus). Thus, the exclusion of *é que* (FOC) in restrictive relatives is expected. In fact, at the level of interpretation where discursive information is integrated, ForceP must establish a topic-comment relation with the “DP-antecedent” of the restrictive relative clause.^{30,31}

analysis in the version proposed in Kayne (1994) are: the lack of motivation for the movement of the NP into the Specifier of CP and the fact that the raised N may have case information inside the relative clause that does not coincide with the case information assigned to the so called “relative clause antecedent” (see Bianchi 1999).

30. Considering specific restrictive relative clauses, Bianchi (2004:87) raises the hypothesis that, at the relevant level of interpretation, the antecedent of the relative is the background, the presupposition, with which the specific restrictive relative is associated, proposing the following configuration:

- (i) $[_{\text{GroundP}} \text{ } [_{\text{ForceP}} \text{ } [_{\text{Force}} \text{ } \dots \text{ } [_{\text{IP}}]]]]]$ (for an example like *The book which I consulted*)

According to this proposal, there is a movement of the NP inside IP to Spec of ForceP, followed by the movement of the DP created by the agreement between D and N, to the Spec of GroundP, where the specific and presuppositional meaning is assigned. However, Bianchi’s analysis is an attempt to propose a cartographic view of relative clauses, including the antecedent, which we think is not an adequate solution, because DP and CP ForceP represent different phases.

31. In this paper we will not deal with the ban of multiple-wh in restrictive relatives (**Eu encontrei a rapariga que deu o que a quem* ‘I met the girl that gave what to whom’). An accurate study of this issue would also require taking into account the (non-)occurrence of this phenomenon in free relatives, a subject that is beyond the scope of this paper. Yet, an anonymous reviewer suggested that the unavailability of multiple-whP in relative clauses was related to

Given these differences, we may ask if the alternation between DP containing restrictive relatives and improper *wh*-questions does not entirely rely on the selection context where they occur, i.e. as arguments of *weakly assertive cognitive definite predicates*.

We claim that this is not so and that the syntactic and discursive properties of these embedded clauses contribute to this alternation. Namely, we consider that the declarative illocutionary force and the *whP/Operator* chains exhibited by improper indirect *wh*-questions and restrictive relatives are relevant for their interpretation as structural alternatives. In addition, the fact that the D-linked *wh*-phrase in improper interrogatives and the raised-NP in restrictive relatives present a similar content constitutes a property that favors this alternation. Finally, the D-linked status of the *wh*-CP and the definite status of the D in the relativized DP³² contribute to assign to both of these phases, CP and DP, a high referential and specific status.

In sum, not only the lexical properties of the predicates that select them, but also some syntactic and discursive properties converge to account for the alternation between improper indirect *wh*-questions and DP containing restrictive relatives.

Due to this alternation it is understandable that some kind of parametric variation may exist across languages concerning the choice of these strategies. While Spanish and Portuguese present both strategies, languages like Finnish only use improper

the lack of *wh in situ* in these clauses (cf. (ii)), in contrast with proper questions (cf. (i)). We reject this property as a distinctive feature of relative clauses. As shown in (iii), improper indirect questions do not allow *wh in situ* in European Portuguese either, although they may present multiple-*wh* (*Eu descobri que rapariga deu a quê a quem* ‘I found out which girl gave what to whom’):

- (i) *Deste o quê?* (EP)
gave the what
‘What did you give?’
- (ii) **Eu encontrei a rapariga que deu o quê.* (EP)
I found/met the girl that gave the what
‘I found the girl that gave what.’
- (iii) **Ele sabe/descobriu/ tu deste o quê.* (EP)
he knows/found out/ you gave the what
‘He knows/ found out you gave what.’

32. Notice, however, that several proposals take the presence of the definite determiner in a DP containing a restrictive relative to be motivated not by the intrinsic definite nature of the antecedent, but by the presence of the relative clause (cf. Kuroda 1968; Carlson 1977; Schmitt 1996). Kuroda (1968) noticed that a restrictive relative clause involves, at a certain level, an indefinite expression (“the man I saw” ≡ “a man that I saw”) and, in turn, an indefinite relative clause (“a man that I saw”) must contain somewhere a definite operator. According to Schmitt (1996), the definite determiner is licensed by the movement of C of the relative clause into a D element to check D-features.

indirect questions (69); and languages like Urhobo only use the relative clause strategy (70), as reported in Keenan and Hull (1973):

- (69) *Jussi tietää ketä miestä nainen löi* (Finnish)
 Jussi knows *which man* the woman hold
 'John knows the man that holds the woman.'
- (70) *John li' – oshale l' aye na teye le* (Urhobo)
 John knows *man* that woman her hold
 'John knows the man that holds the woman.'

However, although similar, these constructions are not absolute synonyms. In improper indirect questions, the full identification of the involved entity, assumed as known by the matrix subject, is not entirely revealed; in contrast, in the relative counterparts, the full identification of this entity is overtly presented in the antecedent of the relative clause.

5. Conclusion

The main goal of this paper was to explain the alternation between improper indirect *wh*-questions and DPs containing a restrictive relative. To achieve this aim, two other goals have been previously pursued: the characterization of the properties of improper indirect questions and the determination of the class of predicates that select them.

Relying on Spanish (Suñer 1991, 1993, 1999; Rivero 1994) and European Portuguese, we have concluded that indirect improper questions should be mainly distinguished from proper indirect questions, because they exhibit a declarative illocutionary force and, from the viewpoint of the subject, they constitute true propositions, with no unknown variable and with an assigned truth value.

Taking into account previous work on English and Spanish, we claimed that improper indirect questions were selected by declarative predicates. We also assumed that some of these predicates under the scope of negation, modality or a question operator may lose their declarative content and license proper indirect questions.

Adopting the typology of complementation predicates proposed in Hinzen and Sheehan (2011), which establishes a close correlation between CP and DPs in terms of their referential potential, we have claimed that improper indirect questions were selected by verbs that could be included into their class I (*strong assertive communication definite predicates*) and class III (*weakly assertive cognitive definite predicates*). Both classes have in common the fact that they comprise the so called semi-factive predicates, i.e. predicates that may lose their factivity in certain contexts. However, at least in European Portuguese, only *weakly assertive cognitive*

definite verbs allow for the alternation between improper indirect questions and DPs containing restrictive relative.

Assuming that the alternation between improper indirect questions and DPs containing a restrictive relative is also motivated by the syntax of these constructions, we adopted Rizzi's cartographic framework. Elaborating on Demonte and Soriano's (2009) proposal of Recursive Comp in Spanish, we concluded that the main differences in proper direct questions in the two languages were a consequence of the fact that, in Contemporary European Portuguese, Int does not project and only Force is available to instantiate illocutionary force features. As for improper indirect questions, we claimed that they differ from proper indirect questions by their declarative illocutionary force.

Extending this framework to restrictive relatives, we argued that their different behavior regarding improper indirect questions had to do with the embedding of the relative clause within a DP and to the non selection of Foc, due to the incompatibility between this functional category and the discursive content of the constituents that occur in ForceP, the complementizer and the raised-NP.

Despite these differences, we claim that several syntactic and discursive properties contribute to explain that the sentences in the alternation between improper indirect questions and DPs containing a relative clause be interpreted as almost synonyms: first, these embedded clauses present the same declarative illocutionary force and exhibit wh/operator chains; second, the D-linked wh-phrase in improper indirect interrogatives and the raised NP in restrictive relatives present a nominal head with similar content, which tightens the correlation between these two kinds of embedded clauses; finally, the D-linked nature of the wh-CP and the definite status of the relativized DP, which is headed by a definite D, contribute to assign to these CP and DP phases a high referential level.

In sum, the syntactic and semantic properties shared by improper indirect questions and definite relative clauses explain their alternation and, at the same time, the parametric variation in the choice of these strategies across languages.

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