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Exclusivity! *Wh*-fronting is not optional *wh*-movement in Colloquial French

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Abstract This article revisits the long-standing issue of the alternation between *wh-in-situ* and *wh-ex-situ* questions in French in the light of diglossia and cross-linguistic data. A careful preliminary examination of the numerous *wh*-structures in Metropolitan French leads us to focus on Colloquial French, which undoubtedly displays both *wh-in-situ* and *wh-ex-situ* questions. Within this dataset, *wh-ex-situ* questions without the *est-ce que* 'is it that' marker are more permissive than *in-situ* regarding weak-islandhood and superiority. In a Relativized Minimality framework, we suggest that *wh-ex-situ* items bear an additional feature, which permits them to bypass these constraints. Colloquial French is thus a *wh-in-situ* language that allows for *wh-ex-situ* under specific conditions, like other *wh-in-situ* languages. Hence we argue against free variation and claim that *wh*-fronting is not driven by a *wh*-feature, but by another feature. Exploring the contexts where *wh-ex-situ* is licensed, we highlight a type of non-exhaustive contrast specific to questions, namely Exclusivity, and provide a formalization. The article therefore also contributes to the larger debate on information structure in questions.

Keywords Wh-questions · In-situ · Ex-situ · Contrast · Diglossia · French

1 Preliminaries: Optionality?

The present article discusses the common idea that *wh-ex-situ* is the normal/default way to form a *wh*-question in Colloquial Metropolitan French and argues that *wh-ex-situ* is actually more marked than *wh-in-situ*.[1] In tackling this question, we shall

[1] Metropolitan French refers to the language used in European France (so-called 'Metropole'), as opposed to other varieties of French in other parts of the world (e.g., Overseas France, Belgium, Switzerland,

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contribute to the more general problem of information structure in questions, which is notably thorny and yet understudied (Beyssade 2006; Constant 2014; Engdahl 2006).

Metropolitan French is a 'mixed language' in the typological literature on *wh*-positions.[2,3] This language hence features both *in-situ* and *ex-situ wh*-phrases (*wh*Ps), as illustrated in (1) and (2) with an argument and an adjunct, respectively

(1) a. **Qui** il a vu?
who he has seen

b. Il a vu **qui**?
he has seen who
'Who has he seen?'

(2) a. **Où** il a travaillé?
where he has worked

b. Il a travaillé **où**?
he has worked where
'Where has he worked?'

The received view is that speakers set a binary parameter in relation with the checking of the inherent *wh*-feature on the *wh*-item. This parameter can be described as overt vs. covert *wh*-movement (e.g., English in 3a vs. Chinese in 3b; Huang 1982) or unobligatory (English) vs. obligatory (Chinese) formation of a prosodic chunk between the *wh*-item and the verb (Richards 2010, 2016; among other analyses). In both approaches, Chinese Logical Form (in 3c) is identical to English surface form (in 3a) with regard to *wh*-placement.

(3) a. [**Who$_i$** do] you like t_i?
b. Ni xihuan **shei**?
you like who

c. [shei$_i$ [ni xihuan e_i]]

In this binary perspective, Colloquial French is deemed to follow the same pattern as English, and *wh-in-situ* questions are seen as marked, which entails that they have received most of the attention.[4] However, works like Baunaz (2011, 2016) and

Quebec, etc.). We elaborate on Colloquial Metropolitan French in Sect. 2 and do not take a stand on the other varieties of French. However, we wish to thank an anonymous reviewer for pointing out that the results achieved here carry over to other varieties of French.

[2] 'Mixed languages' are rare (i.e., 2.5% of 902 languages per Dryer 2013), and include Bahasa Indonesian, Egyptian Arabic, Igbo, Malagasy, among others. Cheng (1991) is one of the first important contributions to this typology.

[3] We shall leave aside echo questions, which strongly favor *wh-in-situ* across languages (Wachowicz 1974a,b). We shall not be examining embedded questions either because they mostly appear with *ex-situ wh*Ps for reasons that might be different from what we have in direct questions (but see Sect. 6 for a few remarks). Finally, we shall omit questions with subject *wh*Ps since they always appear preverbally in French and it cannot be shown whether they are *in-situ* or fronted.

[4] See Baunaz (2011, 2016); Boeckx (2000); Boeckx et al. (2001); Bošković (2000); Chang (1997); Cheng and Rooryck (2000); Coveney (1989, 1995); Denham (2000); Déprez (2018); Déprez et al. (2012, 2013); Larrivée (2016); Lasnik and Saito (1992); Mathieu (2004, 2009); Munaro et al. (2001); Munaro and Pol-

Vergnaud and Zubizarreta (2005) have shown that *wh-in-situ* questions actually come in several guises, one of which is only very slightly marked.[5] *Wh-ex-situ* questions must then be either an optional, freely available variant (of at least one of the varieties of *wh-in-situ* questions) or a different type of *wh*-question. Surprisingly, *wh-ex-situ* are understudied and still await more careful analysis, which we intend to provide here (but see Baunaz 2011:223, fn. 229).

We shall be restricting our attention to the syntactic structures displayed in (1) and (2), a stand that calls for explanation, given the many other options available in French (Mathieu 2009). First, in order to be relevant, the *ex-* and *in-situ* counterparts examined in this article need to be strict prosodic minimal pairs, which leads us to exclude some types of *wh-in-situ* questions. According to Martin (1975) and Vergnaud and Zubizarreta (2005), *wh-in-situ* questions come in two prosodically distinct guises, as in (4a-b) (their 3).[6] Both can be divided into two prosodic phrases $\varphi 1$ and $\varphi 2$. However, the first guise (a) has a rising accent on the subject DP ($\varphi 1$) and a falling accent on the VP ($\varphi 2$), whereas the second one (b) has a rising accent on the subject DP+V ($\varphi 1$) and a falling accent on the PP containing the *wh* ($\varphi 2$). The latter has an emphatic flavor.

(4) a. [La jeune artiste]$_{\varphi 1}$ [a dansé avec qui]$_{\varphi 2}$?
the young artist has danced with whom
α. [La jeune artiste]$_{\varphi 1}$ [a dansé avec qui]$_{\varphi 2}$?
1. Non-presuppositional
2. Presuppositional: Partitive
β. [La jeune artiste]$_{\varphi 1}$ [a dansé avec /qui\]$_{\varphi 2}$
3. Presuppositional: Specific
b. [La jeune artiste a dansé]$_{\varphi 1}$ [avec qui]$_{\varphi 2}$?

Moreover, type (4a) is also reported to come in two prosodic types, α and β, the latter displaying an additional rise-fall accent on the *wh* (Baunaz and Patin 2011). Finally, α and β correspond to three different interpretations (1, 2, 3; Baunaz 2011, 2016).[7] In order to control for the prosodic facts, we shall ignore the subtle difference between 1. and 2. (as in Baunaz and Patin 2011) and use the least-marked type of *wh-in-situ* questions (aα) to contrast it with *wh-ex-situ*. The exceptional types (aβ) and (b) will

lock (2005); Myers (2007); Quillard (2000); Shlonsky (2012); Tailleur (2014); Vergnaud and Zubizarreta (2005); Zubizarreta (2003). See also GENWH 2018, *The Geneva WH-orkshop on Optional Insituness* at https://genwh2018.wordpress.com/, last accessed 18 May 2020.

[5]This is also assumed more or less explicitly in Adli (2006), Aoun et al. (1981), Baunaz and Patin (2011), Hamlaoui (2010, 2011), and Rizzi (1996).

[6]Beyssade (2006) also proposes different prosodic patterns for *wh-ex-situ* in Standard French, a variety of French we shall not be concerned with here (see Sect. 2).

[7]Here are Baunaz's (2016) definitions (The reader is referred to the original article for details):

"A partitive wh-phrase is an object, which belongs to a presupposed set containing more objects. Each of the objects of the set can potentially be referents to the answer of the wh-phrase, i.e., all are alternatives." (p. 134).

"Specificity narrows down the context to familiar individuals, excluding alternatives. A constituent question involving specificity entails an answer referring to a familiar individual that the interlocutor has in mind." (p. 137)

be mentioned only when needed in order to avoid confusion.[8] We shall informally refer to (aβ) and (b) as 'stressed *wh-in-situ*.' Finally, we shall not elaborate on the final, interrogative intonation in *wh-in-situ* questions, which was argued to be like *yes/no* questions along with a presuppositional analysis of these questions (Cheng and Rooryck 2000; Déprez et al. 2013). Indeed, there is variation among speakers (Déprez et al. 2012; Tual 2017), and this type of intonation seems to concern only a variety of French in which *wh-in-situ* is excluded from subordinate clauses, which is not the case of the one under study here (see also Baunaz 2011:43). Second, French allows variation in its *wh-ex-situ* questions with the possible, additional insertion of *est-ce que* 'is it that'. In this contribution, in order to work from minimal pairs, we shall only consider the *ex-situ qu'est-ce que* 'what is it that' in contrast with the *in-situ quoi* 'what'. The other combinations (e.g., *où est-ce que* 'where is it that'), which are quite rare in adult, oral corpora, are left for further investigation.[9]

This said, the article will argue against optionality between *wh-ex-situ* and *in-situ* questions, and will claim that French is actually a *wh-in-situ* language that sometimes allows for *wh-ex-situ*, under specific conditions, much like other *wh-in-situ* languages. Such an alternation is well documented in languages across the world and is illustrated in (5) with Eastern Armenian (Megerdoomian and Ganjavi 2000, glosses as in original).

(5) a. Ara-n **vor girk-en** e k'artatsel? [Eastern Armenian]
Ara-NOM which book-ACC is read
'Which book did Ara read?'

b. **Vor girk-en** e Ara-n k'artatsel?
which book-ACC is Ara-NOM read
'Which book did Ara read?'

The unmarked way to form a *wh*-question is (5a). (5b) is an instance of fronting or scrambling. This type of alternation is widespread and is also attested in American Sign Language (Abner 2011), Korean (Beck 2006; Beck and Kim 1997), Mandarin Chinese (Hoh and Chiang 1990, Cheung 2008), some Northern Italian Dialects, including Trevigiano (Bonan 2019), Persian (Megerdoomian and Ganjavi 2000), and Turkish (Özsoy 2009), to name but a few.

A reasonable claim is that this additional movement of a *wh*-item in *wh-in-situ* languages does not come for free. However, no or little motivation has been given for these frontings and scramblings in the past literature. Based on child and adult data, we shall aim to show that French behaves like a *wh-in-situ* language, and to provide

[8](4b) is arguably a case of 'Question with Declarative Syntax,' in which the focus is replaced *in situ* by a *wh*, and the interrogative meaning is acquired at the pragmatic level and does not directly follow from clause-typing (Bobaljik and Wurmbrand 2015), which solves Baunaz's (2011) issue on a subset of D-linked multiple questions in English. It is beyond the scope of this article to compare the syntax of the various types of *wh-in-situ* questions. Poletto and Pollock (to appear) (and in earlier work) argue that there are at least two syntactic types of *wh-in-situ*, respectively displaying overt remnant-IP and remnant-vP movement. We claim that there is at least one type with covert *wh*-movement and no IP-movement (see Sect. 3), in line with Bonan's (2019) cross-Romance perspective.

[9]Ratios of other combinations/all *wh-est-ce que* forms: 2.3% ($N = 15/651$; Dekhissi and Coveney 2018), 3% ($N = 73/2391$; Palasis et al. 2019), 3.7% ($N = 5/134$; Reinhardt 2019). Details on *c'est wh- que* and *wh- c'est que* with (69).

a motivation for the *wh*P not to be *in-situ*, but *ex-situ*. In our view, the movement is triggered by a focus feature that can be defined as Exclusive, and for which we propose a semantics.

The article is organized as follows: In Sect. 2, we define the contours of Colloquial French, as opposed to Standard French, by relying on the Diglossic Hypothesis. This point is crucial because not all patterns of *wh*-questions belong to the same variety. Section 3 then examines *in-situ* and *ex-situ*, simple and multiple questions in order to test and compare their sensitivity to constraints on *wh*-movement. Since (at least some) *wh-in-situ* questions appear as the unmarked way to form *wh*-questions in Colloquial French, the semantic properties of *wh-ex-situ* are further investigated in Sect. 4 in order to uncover a possible and common trigger to *wh*-fronting in this language. Section 5 then formalizes the suggested trigger, namely Exclusivity, a contrastive operator. Finally, we draw some conclusions and suggest leads to further research in Sect. 6.

2 Defining Colloquial French

The study must consider only one variety of Metropolitan French in order to explain the *in-situ*/*ex-situ* alternation. Thus, it is crucial to start with a definition of Colloquial French (the subject of our study), in contrast with Standard French (which we shall leave aside).We claim that the diglossic hypothesis provides touchstones for determining which *wh*-structures belong to one or the other variety, Subject-Clitic inversion (henceforth SCLI) being particularly relevant to the issue. Note that no variety possesses all the patterns of *wh*-questions.

2.1 The diglossic hypothesis

Syntactic variability has been widely acknowledged in Metropolitan French. Three main areas of variation have been thoroughly examined in adult speech: subject clitics, negation and interrogative structures (Ashby 1977a,b, 1981; Coveney 2002, 2003; Lambrecht 1981; Pohl 1965, 1975, among others). Two different hypotheses currently account for this variability, that is, Variationism and Diglossia.[10] The debate mainly hinges upon the number of grammars that a French native speaker actually handles. The variationist approach suggests that the different variants of French belong to the same grammar, and that variation is due to social and stylistic factors (Beeching et al. 2009; Blanche-Benveniste 1997; Coveney 2011; Gadet 2003, among others). There are no grammatical constraints on the combinations of variants in this unique grammar (Rowlett 2011). In contrast, the diglossic hypothesis, which builds on Ferguson's (1959) work, suggests that a variant of French belongs to one of two cognate, but nevertheless distinct, grammars (Barra-Jover 2004, 2010; Massot 2008, 2010; Massot and Rowlett 2013; Zribi-Hertz 2011). Variation is explained by the coexistence of two grammars in the minds/brains of the French native speakers. Let us call these two grammars G1 and G2.

[10] Villeneuve and Auger (2013) have aimed to reconcile both approaches based on French and Picard data.

Table 1 Formalizing Diglossia in child data

Items	Diverging statuses	
	G1	G2
Nominative clitics (*je* 'I', *tu* 'you', *il* 'he', etc.)	Agreement markers	Subject pronouns
	Proclitics only	Pro- or enclitics
	Obligatory	Optional
	Elided (*i* instead of *il*/_C)	Non-elided (always *il*)
Nominative clitic and co-occurring DP	Doubling	Dislocation
Negation (*(ne)…pas* 'not')	Simple	Discontinuous

In the framework of Diglossia, Massot (2010) examined the combination of six binary variables in spontaneous adult data, for example, simple negation *pas* 'not' (G1) vs. discontinuous negation *ne…pas* (G2), and the use of the third-singular pronoun *on* 'one' (G1) vs. first-plural pronoun *nous* 'we' (G2). The author reported that his informant never code-switched within the boundaries of his clauses, and hence argued in favor of the strong grammatical constraint that a characteristic of one grammar (e.g., G1 *pas* or *on*) cannot co-occur with a characteristic of the other grammar (e.g., G2 *ne…pas* or *nous*) within the same clause. Thus, a sentence with code-switching (e.g., **on ne gagnait pas énormément* 'one did not earn much') is not expected within the diglossic hypothesis (Massot 2010:100).

Other variants in adult French are also well documented and the most emblematic topic is probably the morpho-syntactic status of subject clitics, notably *il* 'he' (Ashby 1984; Culbertson 2010; De Cat 2005; Kayne 1975; Legendre et al. 2010; Morin 1979; Rizzi 1986; Roberge 1990; Zribi-Hertz 1994, among others). In G1, *il* takes the elided form *i-* before consonant-initial constituents (e.g., *i-travaille* 'he works'), is analyzed as a preverbal agreement marker, and hence cannot undergo SCLI. In contrast, in G2, *il* is never elided and, as a proper pronoun, can appear pre- or postverbally (e.g., *il travaille, travaille-t-il*).

More evidence in favor of the diglossic approach has been adduced in studies in acquisition. Indeed, the two grammars are assumed to emerge subsequently, the first one being acquired at home and the second being mainly learned 'by the means of formal education' (Ferguson 1959:331). Preschool children are therefore expected to initially handle G1 only and develop G2 later. Palasis (2013, 2015) highlighted this asynchrony in kindergarten data, and showed that children consistently used the items of the same grammar within the boundaries of their utterances, as detailed in Table 1 and instantiated in (6).

(6) Consistent use of G1 or G2 within the boundaries of an utterance (Palasis 2015:135):

a. Mais *i* voulait *pas* que j(e) le nourrisse. (LOU, 4;9, G1)
but he wanted not that I him feed
'But he didn't want me to feed him.'

b. Mais lui *il* *ne* voulait toujours *pas*. (LOU, 4;9, G2)
but him he neg wanted always not
'But he still didn't want.'

Table 2 Distribution of *wh*-position in relation with SCLI

	SCLI	Elided *il* 'he'	Grammar	*Wh*-position
a. i travaille où? 'he works where'	No	Yes	G1	in-situ
b. où i travaille? 'where he works'	No	Yes	G1	ex-situ
c. *travaille-t-il où? 'works he where'	Yes	No	G2	*in-situ
d. où travaille-t-il? 'where works he'	Yes	No	G2	ex-situ

SCLI is rare in child questions (0.1% of the interrogatives with a subject clitic) and, when instantiated, not always fully mastered, as seen in (7c).[11]

(7) SCLI in child data:

a. Où es- tu Maman Ours? (CAR, 3;5, G2)
where are you Mummy Bear
'Where are you Mummy Bear?'

b. Que se passe-t- il? (VIC, 3;5, G2, clearly imitating adult intonation)
what REFL happens it
'What is going on?'

c. *Qu' est- c(e) qui passe-t- il? (KEL, 3;7, G2)
what is it that happens it
'What is going on?' (intended)

These facts are consistent with the diglossic hypothesis that French children start with G1 (no SCLI) and develop G2 (SCLI) only later.

2.2 Diglossia and *wh*-questions

Let us now place *wh*-questions in the picture by determining which *wh*-interrogative structures belong to G1 and G2. SCLI, which is found only in G2, is particularly relevant to the matter, as illustrated in Table 2.

Table 2 highlights that G1 displays both *in-situ* (in a) and *ex-situ wh*-positions (in b). In contrast, we have no positive evidence in our child dataset that G2 also features *wh-in-situ*, that is, there are no occurrences combining a non-elided clitic and an *in-situ wh*-word (e.g., *il travaille où?* 'he works where'). Therefore, no conclusion can be drawn with regard to variation of the *wh*-position in G2, which at this stage may or may not be described as an exclusively *wh-ex-situ* language, on a par with English.[12] We shall assume that G1 is Colloquial French and G2 Standard French.

[11] Examples are from our corpus of seminaturalistic data, which contains a total of 913 finite, matrix *wh*-questions produced by 17 children between 2;06 and 4;11, all native speakers of L1 Metropolitan French (Palasis et al. 2019).

[12] For an insightful account of the behavior of *wh*Ps in SCLI G2 questions, see Poletto and Pollock (to appear) (and previous work).

In this section, we observed that Colloquial French is the only variety of French that undoubtedly features an *in-situ*/*ex-situ* alternation and that *wh-ex-situ* questions with SCLI belong exclusively to Standard French (Table 2). Consequently, we shall concentrate on Colloquial French in the remainder of the paper and leave Standard French for further research.[13]

3 Evidence that *wh-in-situ* questions are unmarked questions

In this section, we compare *wh-in-situ* and *wh-ex-situ* questions, provide evidence that *wh-in-situ* is the unmarked counterpart of *wh-ex-situ*, and conclude that Colloquial French displays only covert *wh*-movement. In Sect. 3.1, we examine simple and multiple questions with regard to strong and weak islands. This leads us to adopt the theoretical framework of Relativized Minimality in Sect. 3.2. Section 3.3 then widens the investigation to Superiority. These tests highlight when *in-situ* is either unacceptable or degraded compared to *ex-situ*, and hence enable us to pinpoint the feature(s) *ex-situ wh*-items carry, contrary to their *in-situ* counterparts.

Before we proceed however, a note on D-linking and the French counterpart of *which* is in order. The demonstration will rely on bare *wh*Ps only and thus discard *quel* 'which' *wh*Ps for three reasons. First, French *quel wh*Ps are ambiguous between 'which (book)' and 'what (book)' and, therefore, cannot be used straightforwardly to test D-linking. Second, French has an unambiguously D-linked *wh*-item, namely *lequel* 'which one.' But French *lequel* needs to be more strongly related to the context than English *which*. Pending more research on this topic, we decide to leave it aside. Finally, the best reason is that bare *wh*Ps can be contextually D-linked, as already noted in Pesetsky's (1987) seminal paper. This means that when comparing a 'which' phrase with a bare *wh*P, we can never be sure that we are comparing a D-linked and a non-D-linked *wh*P. Consequently, in order to exclude possible D-linking effects, we shall contrast only bare *wh*Ps in strongly controlled contexts.

3.1 Islands

In *wh-ex-situ* languages, some configurations are degraded when the *wh*P is in the (matrix) CP-domain and in a relation with certain types of embedded clauses or after a negative operator. This degradation is assessed when the movement from the lower to the higher position is blocked. These configurations thus provide good tests to check whether movement takes place overtly or covertly. They are metaphorically named 'islands,' and can be either 'strong' (i.e., they block all types of extractions) or 'weak' (i.e., some extractions are possible; Cinque 1990; Ross 1967; Szabolcsi 2006). Adjuncts are well-known strong islands, as in (9), and negative operators are examples of weak islands, as in (17) and (18). In each configuration, *wh-in-situ* is provided in (a) and *wh-ex-situ* in (b). As mentioned earlier, context is crucial to the

[13] Partitioning the data has seemed indispensable to other authors before us (Baunaz 2011, 2016; Hamlaoui 2010, 2011; Mathieu 2004). We strengthen the dichotomy by resorting to the diglossic hypothesis.

analysis. (8) sets an overall context for the examples in Sect. 3 and is fleshed out when necessary.[14]

(8) Overall context: *The university library is closing and gives out most of its books and stationery. Before getting an item, a possible recipient has to be interviewed by Pierre, one of the librarians, in order for him to know what the new destination of the given item will be. Then, another librarian, Julien, is allowed to give the item to the interviewee. Pierre and Julien regularly exchange positions. Importantly, due to the size of the library, nobody really knows the exact list of books and other items given out.*

3.1.1 Strong islands

In this section, we shall see two crucial points: *wh-in-situ* involves covert movement; *wh-ex-situ* is more constrained, a point that we shall verify in the next section as well.

Examples (9) display strong, adjunct islands (i.e., *avant que* 'before that' clauses):

(9) Simple questions' obedience to strong islandhood:
We are at the very beginning of the giving-out process. The library director finds out that Julien gave out a book to someone before Pierre had interviewed him/her. She asks Julien:

a. *T' as donné un livre [avant que Pierre il ait vu **qui**]?
you have given a book before that Pierre he has seen who

b. ***Qui**$_i$ t' as donné un livre [avant que Pierre il ait vu t_i]?
who you have given a book before that Pierre he has seen

In these simple questions, both *in-situ* and *ex-situ wh*Ps are unacceptable. The reason for b's unacceptability is obviously syntactic: *qui* is prevented from moving out of the *avant que* clause. Crucially, we also take a's unacceptability as indication that *qui* normally covertly moves to check the *wh*-feature, which it cannot do here because there is no possible escape from the island. In fact, contrary to weak islands (see fn. 24 and Sect. 3.1.2), all accounts of adjunct, strong islands we are aware of are dependent on the *wh*P moving out of the clause, be it in terms of subjacency/barriers (Huang 1982; Chomsky 1976), phases (Müller 2010), or the eventive structure of the whole sentence (Truswell 2007).[15] The relevant LF of both a and b is schematized in (10).

[14] In all the examples in Sect. 3, it is important for the *wh*P not to range among a given set, i.e., not to be D(iscourse)-linked (Pesetsky 1987). Otherwise, another type of *wh-in-situ* question is triggered (partitive, or exclusive with stressed *wh*-), whose behavior regarding islandhood is different, as shown in Baunaz (2011, 2016).

[15] No good representational account in terms of Minimality is available, as acknowledged by Luigi Rizzi himself, who also posits a subjacency constraint to explain strong islands (Rizzi 2001). The reason for that is that no feature has been found so far that could be responsible for the Minimality effect. More on Relativized Minimality in Sect. 3.2. Another family of explanations accounts for sentences like (9b) in terms of processing difficulties involving the interaction between the necessity of holding a term in working memory until the gap (its interpretation position) is reached, and the lexical semantic processing factors at the embedded clause boundary (Kluender and Kutas 1993). But they do not address the degradation of cases like (9a), where supposedly nothing has to be held in memory.

(10) LF: Q WH… t

It is time to pause here to consider another very influential explanation, namely the hypothesis of an overt movement of the *wh*P followed by a remnant-IP movement (Munaro et al. 2001, and followers). A simple sentence like (11a) is derived through the steps described in b and c.

(11) a. Tu vois qui?
b. Step1: qui$_i$ tu vois t$_i$
c. Step2: [tu vois t$_i$]$_j$ qui$_i$ t$_j$

According to this hypothesis, (9a) is ruled out because the strong island blocks the *wh*-movement required in Step1. As appealing as it may be, this theory will not be retained here, mainly because it does not seem to extend to Colloquial French[16] (see Bonan 2019; Etxepare and Uribe-Etxebarria 2005; Manzini and Savoia 2011; Poletto and Pollock 2015; Uribe-Etxebarria 2003, for more details and tests on Spanish and Italian dialects; and Bonan 2019; Baunaz 2011; Cheng and Rooryck 2000; Mathieu 2002, for a stand similar to ours on Colloquial French). Indeed, the theory predicts that the *wh*-term should always be rightmost (i.e., the "sentence-finality requirement"), whereas Colloquial French displays sentences like *T'as vu quoi hier?* 'what did you see yesterday?,' *T'as donné quoi à Paul?* 'what did you give to Paul,' in which the prosodic pause signaling deaccenting of *hier* and *à Paul* is optional after *quoi*. Another option would be to assume several derivational steps topicalizing *hier* or *à Paul*, then fronting the *wh*-items before the remnant movement,[17] but these steps would be loosely motivated.

Moreover, Bonan (2019) entertains the idea that patterns like (14) could be evidence for a French *wh*-position of a third type, namely intermediate, IP-internal, above vP, as in Trevigiano.[18]

(12) Tu vois Pierre **ici/lundi.**
you see Pierre here/on Monday

(13) Tu vois Pierre **où/quand**?
you see Pierre where/when

(14) ??Tu vois **où/quand** Pierre?
you see where/when Pierre
'Where/when do you see Pierre?'

(15) *Tu as **où** vu Pierre?
you have where seen Pierre
'Where did you see Pierre?'

[16] It crucially rests on varieties of French that feature SCLI (G2), which we excluded (see Sect. 2), but are well accounted for in the remnant-movement approach. This means that Bonan's (2019) position is right, according to which both remnant-IP movement and *bona fide wh*-insituness are necessary to account for the variety of *wh*-insituness across (and sometimes within) languages.

[17] Jean-Yves Pollock (p.c.).

[18] We thank an anonymous reviewer for pointing out this fact to us.

Time and location adjuncts appear clause-finally in French as evidenced in (12), which is also possible for the corresponding *wh*-terms in (13), but not obligatorily if we consider (14). In (14), *où*/*quand* have moved to an IP-internal position. However, Baunaz (2011) points out the optionality and degradation of this kind of example, and the specific semantic (strongly presuppositional) and prosodic conditions under which this kind of sentence is marginally acceptable. Bonan (2019) concludes that (14) is better seen as an instance of non-featurely-driven scrambling. This is all the more plausible given that an IP-internal movement would also derive a sentence like (15), where *où* would ungrammatically surface between the T (auxiliary *as*) and v/V (past participle *vu*). Be that as it may, its presuppositional character and its specific prosodic conditions exclude this intermediate *wh*-position from our study (see 4 and fn. 7).

Coming back to the hypothesis that both overt and covert movement must be considered if we want to explain the patterns under examination, multiple questions[19] confirm the previous results and take us a step further in hinting at the possibility that *wh-ex-situ* structures are more constrained than *wh-in-situ* ones:[20]

(16) Strong islandhood in multiple questions:
One morning, the library director asks Pierre:

a. *In situ* (1)
*Hier, t' es parti [avant que Julien il ait donné **quoi** à **qui**]?
yesterday you have left before that Julien he has given what to whom

a′. *In situ* (2)
T' as donné **quoi** [avant que Julien il ait vu **qui**]?
you have given what before that Julien he has seen who

b. *Ex situ*
***Qu'est-ce que**$_i$ t' as donné t$_i$ [avant que Julien il ait vu **qui**]?
what you have given before that Julien he has seen who

While unacceptable when both *wh*-arguments are in the island in (16a), the sentence becomes better when the matrix verb displays a *wh*-argument as in (16a′). A possible explanation is that one *wh*-item in the matrix clause is required (if the other one is trapped in an embedded island) and suffices to covertly check the *wh*-feature on matrix C, hence freezing the movement of the second *wh*-item (here *qui* in the embedded clause).[21]

[19] We limit ourselves to two *wh*-items here.

[20] (16a′) sounds echoic to an anonymous reviewer (native speaker of French), whereas our informants found it acceptable in the given context as a request for information. This discrepancy may be due to an idiolectal difference.

[21] Alternatively, one could propose an explanation along the lines of Richards's (1998:604–608) *Principle of Minimal Compliance*. Simplifying the framework, constraints apply only once. In our example (16a′), both *wh* move, but the second one is not submitted to subjacency, since this constraint was already checked and found non-violated by the first *wh*. "It appears to be true quite generally that in cases involving multiple *wh*-movement to a single [+wh] complementizer, only the first-moved *wh*-word will have to obey Subjacency; the other *wh*-movements are free from Subjacency. This is true regardless of the levels at which the *wh*-words move [SS or LF]." (p. 608)

In contrast with *wh-in-situ*, strong islandhood blocks *ex-situ* multiple questions (16b), albeit one of the *wh*-items is in the matrix. Following what we just saw, this indicates that it is not sufficient that the *wh*-feature on C is checked by the moved *wh*. Our hypothesis is that the degradation is due to the necessity for the second *wh* to move as well, which it cannot do because it is trapped in the adjunct island.[22] Weak island facts also point towards *wh-ex-situ* structures involving an additional operation.

3.1.2 Weak islands

In this section, we show that both syntax (more precisely, Minimality but not Intervention) and semantics (Contradiction) are at play in our weak-island facts. As in the previous section, we give simple and multiple question examples. We illustrate weak-island effects with a negative operator in (17) and (18).[23]

(17) Negative operator *pas* 'not' (argument condition):
The library director finds out that Julien refused to hand out an item. She asks Pierre:

a. *Julien il a pas donné **quoi**?
Julien he has not given what

b. **Qu'est-ce que**$_i$ Julien il a pas donné t_i ?
what Julien he has not given

(18) Negative operator *pas* 'not' (adjunct condition):
The library director knows that one day instead of leaving at 5 pm Julien stayed. She asks Pierre:

a. *Julien il est pas parti à l'heure **quand**?
Julien he has not left on time when

b. ?***Quand**$_i$ Julien il est pas parti à l'heure t_i?
when Julien he has not left on time

Weak islands are taken to display an acceptability asymmetry between argument and adjunct extractions, which is also reported here for *wh-ex-situ* questions (17b vs. 18b).[24] However, the examples are of interest here because *wh-in-situ* questions do not feature the asymmetry, and are rated as badly for arguments as for adjuncts (a-sentences in 17 and 18). Even if this is not exactly in line with the judgments reported in Baunaz (2011), whose informants tend to accept the configurations repre-

[22]Once again, additional stress on the *wh-in-situ* repairs the island violation and triggers a pair-list reading (Hirschbühler 1979).

[23]We shall not use factive islands here because the judgments of our informants are less clear-cut and no clear contrast appears when the context changes.

[24]We follow Abrusán's (2014) semantic theory of weak islands based on the idea that the interaction between the island that contains certain types of predicates and some question words (but crucially not all) yields a contradiction (i.e., configurations in which there is no maximally informative answer contrary to what is required in the act of questioning). This account best explains the argument/adjunct asymmetry and why the unacceptability disappears in certain contexts.

sented in (17a) and (18a), Baunaz (2011:44, 60–61) nevertheless notes that they are constantly felt to be degraded with respect to their *ex-situ* counterparts and that the argument/adjunct asymmetry exists in *ex-situ* questions only.[25]

This means that the *in-situ* argument questions in (17a) are probably degraded because of a factor independent from Abrusán's contradiction theory, which explains why the adjunct questions in (18a-b) are degraded. Importantly, note that the degradation CANNOT be due to an intervention effect, because under current accounts (Beck 2006; Haida 2008; Mayr 2014, and works based on them) intervention effects arise when the LF is as in (19) (intervention between Q and the *wh*), that is when the *wh*-item does not move. This is different from what we saw in (10) in Sect. 3.1.1 with covert movement and no possible intervener between Q and the *wh* (see Beck 2006 building on a reasoning on D-linked multiple questions in Pesetsky 2000).

(19) LF: *Q ... intervener ... WH

The multiple-question data in (20) and (21) confirm these results:

(20) Weak-islands in multiple questions: Negative operator *pas* 'not' (argument condition):
After a few days, Pierre and Julien have been alternatively in charge of handing out the items. The library director knows that they both gave books, but that Julien refused some items to some people. She asks Pierre:

a. *Julien il a pas donné **quoi à qui**?
Julien he has not given what to whom

b. **Qu'est-ce que** Julien il a pas donné **à qui**?
what Julien he has not given to whom

b′. ?**À qui** Julien il a pas donné **quoi**?
to whom Julien he has not given what

(21) Weak islands in multiple questions: Negative operator *pas* 'not' (adjunct condition):
After a few days of vacation, the director comes back to the library and asks about the employees. She finds out that Julien worked from all the desks every day except for one day. She further asks:

a. *Julien il a pas travaillé **où quand** ?
Julien he has not worked where when

a′. *Julien il a pas travaillé **quand où** ?
Julien he has not worked when where

b. ***Quand** Julien il a pas travaillé **où**?
when Julien he has not worked where

b′. ***Où** Julien il a pas travaillé **quand**?
where Julien he has not worked when

[25] Note that the asymmetry resurfaces and (only) the argument questions become better when the *in-situ* questions are set in a context that makes them partitive or specific (in which case, the *wh-item* is stressed, a pattern that we do not examine in detail here; see the discussion around 4 in Sect. 1).

(22) Q WH … Foc/Neg … WH

Multiple *ex-situ* questions in weak-island contexts are noteworthy in three respects: 1) Like simple questions, they display the argument/adjunct asymmetry, as illustrated in (20b/b′) vs. (21b/b′); 2) Multiple *ex-situ* questions are better than their *in-situ* counterparts; 3) They are degraded, however, with respect to simple *ex-situ* questions in the same contexts (see 17b). Aspect 1) is expected in weak-island situations, where adjunct *wh*-questions are ungrammatical for independent semantic reasons (see fn. 24). Aspect 3) is unexpected. However, the marginal acceptability of (20b/b′) suggests that the contrast between simple and multiple questions may be due to processing difficulties.[26]

Finally Aspect 2) confirms the observation made on simple questions: French *wh-in-situ*, but not *wh-ex-situ* questions are degraded in contexts where Abrusán's (2014) principle (fn. 24) is not at play, namely when the question bears on an argument. Consequently, the degradation must be attributed to another factor. We follow Baunaz (2016) in positing that a Relativized Minimality effect applies here à la Starke (2001) and Rizzi (2004).

3.2 Relativized minimality

In this section, we explain what Relativized Minimality is and how it can account for the marginality of *in-situ* questions, but also for the acceptability of *ex-situ* questions, provided that we posit that the latter are endowed with an additional feature.

In a configuration such as (23) or (24),[27] Y intervenes between X and Z because they share a feature (or a bundle of features) α. Note that if Y has a richer feature structure (for example bearing both α and β features), the same effect arises, as in (24). In derivational terms (i.e., Minimal Link or Attract Closest Constraint; Chomsky 1995), X probes for an item that bears the feature α, but it meets Y "before" its actual goal Z, Z is therefore left behind, and the derivation crashes. In contrast, (25) displays no effect because the feature structure of X is richer than that of the possible intervener Y. Thus X is allowed to probe for Z past Y to check its feature β.

(23) *Xα … Yα … Zα …

(24) *Xα … Y$\alpha\beta$ … Zα …

(25) X$\alpha\beta$ … Yα … Z$\alpha\beta$ …

Following Rizzi (2004, 2014) and Baunaz (2011, 2016), we assume that Minimality effects arise between features of the same family. In particular, *Wh*, Neg, and Focus features belong to the same group of Quantificational features. In this framework, the

[26] Unless speakers construe the second *wh* as remaining *in situ*, in which case we are in configuration (i) hereafter and an intervention effect could arise between Q and WH2. This is unlikely, however, given our analysis of (16b) and Dayal's (1996, 2003) account for multiple questions, in which both *wh* must be in CP (i.e., configuration (i) does not arise for multiple *ex-situ* questions).

(i) Q WH1 … intervener … WH2

[27] Where X asymmetrically c-commands Y and Y asymmetrically c-commands Z, X and Y being of the same structural type, and where X and Z form a chain.

in-situ sentences in (17a, 20a) are degraded because the C[+wh] head, the *wh-in-situ*, and the intervening operator (e.g., *pas* 'not') all share the same quantificational feature. Thus, the *wh* is not attracted to CP at LF and the derivation crashes (see also Beck 1996; Kratzer and Shimoyama 2017 [2001]:139–140).[28]

Put otherwise, *wh-in-situ* questions in (17) and (20) are ruled out because the *wh*-items are not endowed with an extra feature that would allow them to escape, namely they only carry a *wh*-feature. Conversely, the acceptability of (17b) shows that the *ex-situ wh*-item carries an extra feature. *Ex-situ* questions like (17b) provide evidence that *wh*-items can sometimes be extracted from weak islands (e.g., with a negative operator). Under the previous analysis, the extraction is possible only if *ex-situ*, but not *in-situ wh*-items bear an additional β feature, as schematized in (25).[29] The remainder of Sect. 3 will test these assumptions against the Superiority Condition.

3.3 Superiority

In addition to strong- and weak-island effects, multiple questions allow us to test Superiority, another hallmark of *wh*-movement (Chomsky 1973). We shall examine *in-situ* and *ex-situ* facts separately and show that the former, but not the latter exhibit such an effect.

3.3.1 Superiority and in-situ

Let us observe the following multiple question, which features two *in situ wh*Ps:

(26) Julien a donné **quoi à qui**?
Julien has given what to whom

(27) Possible LFs for (26):

a. **quoi** Julien a donné **à qui**?

a′. **quoi à qui** Julien a donné?

b. **à qui** Julien a donné **quoi**?

b′. **à qui quoi** Julien a donné?

First, it is noteworthy that a single-pair reading for a multiple question like (26) seems to be freely available. However, some speakers also allow for a pair-list reading. Second, two competing LFs are possible in this case: (27a),[30] in which *quoi* checks the *wh*-feature on C and is the sorting key (i.e., the answer is (28a), and (27b), in which *à qui* checks the *wh*-feature on C and is the sorting key (i.e., the answer is (28b)).

[28]Crucially, as already noted in fn. 25, according to Baunaz (2016), the questions become acceptable when the *wh*-item is endowed with a feature [+specific] (and sometimes [+partitive]).

[29]Likewise, some speakers of French, including an anonymous reviewer, find (18b) slightly better than (18a) (hence the rating ?*) because the former violates only Abrusán's island constraint, while the latter additionally violates Relativized Minimality.

[30]Or (27a′) if both *wh* must be in CP to obtain a pair-list reading as proposed in Dayal (1996, 2003).

Crucially, (with no *wh* stressed), (28a) is highly preferred over (b), which suggests that the LF of (26) is (27a).

(28) a. Julien a donné un livre à Mme A. et un stylo à Mme B.
Julien has given a book to Mrs A. and a pen to Mrs B

b. #? À Mme A. Julien a donné un livre et à Mme B. un stylo.
to Mrs A. Julien has given a book and to Mrs B. a pen

This is reminiscent of the Superiority Condition (29), whose application to *wh*-movement predicts the ungrammaticality in (30c).

(29) Superiority Condition (Chomsky 1973):
No rule can involve X,Y in the structure:
… X … [… Z … – WYV …] …,
where the rule applies ambiguously to Z and Y, and Z is superior to Y.

(30) Application to *wh*-movement (Kuno and Robinson 1972):

a. [C_{+WH} [$_{IP}$ Who saw what?
b. Who_i C_{+WH} [$_{IP}$ t_i saw what?
c. *$What_i$ C_{+WH} did [$_{IP}$ who see t_i?

In (30), C[+wh] can attract the closest *wh* as in (b), but not the farthest, as in (c); (23) illustrates this configuration. Crucially, (c) dramatically improves if *what* is D-linked (Pesetsky 1987), which could correspond to the configuration in (25).[31] For Colloquial French, there is further complication though. The fact that D-linking rescues Superiority violation as just mentioned for English can be seen from the embedded-question patterns in (31) (still in the library scenario).

(31) a. ??/✓ Le directeur se demande **à qui** t' as donné **quoi**.
the director himself asks to whom you have given what

b. *Le directeur se demande **ce que qui** a lu.
the director himself asks what who has read

As expected, in (31a), movement of the indirect object *à qui* over the direct object *quoi* gives rise to a Superiority effect. However, as in English, (a) improves a lot in a context where *à qui* and *quoi* are D-linked, for example if the library director knows that there are only two items to give out (a book and a pen) and only two visitors (say, Maria and Samantha). Crucially, (b), with the object that has moved past the subject, is unacceptable and does not improve in any context. Whatever the reason for that, Superiority tests involving subjects do not apply in French and we shall test Superiority based only on direct and indirect objects.[32] Thus, (26) and (28) show that Colloquial French *wh-in-situ* questions are actually sensitive to Superiority.

[31] Despite much resemblance, Superiority is not easily amenable to Relativized Minimality, as pointed out in Rizzi (2011).

[32] There has also been discussion around the order of direct and indirect objects (Larson 1988). Note however that (i), which features the reverse order of (26), is strongly unacceptable, no matter the prosody. We take it to be proof that (26) features the basic word order.

Table 3 Properties of *wh-in-situ* and *wh-ex-situ* questions in Colloquial French

	Properties	In-situ	Ex-situ
A	Sensitivity to strong islandhood	✓	✓
B	Sensitivity to weak islandhood	✓	*
C	Sensitivity to Superiority	✓	*
D	Pair-list reading	✓	✓
E	Single-pair reading	✓	??

3.3.2 Superiority and ex-situ

Multiple questions with *wh-ex-situ* lack the Superiority effect, as shown in (32).[33] Note that speakers manifest a strong preference for a pair-list reading of these questions, even if some of them do not exclude a single-pair reading.

(32) a. **Qu'est-ce que** t' as donné **à qui**?
what you have given to whom

b. **À qui** t' as donné **quoi**?
to whom you have given what

3.4 Intermediate summary

Table 3 summarizes the facts observed in Sect. 3 with regard to islands, Superiority and interpretation. It shows that *wh-ex-situ* questions differ from *in-situ* ones in their weaker sensitivity to weak islands and Superiority, properties we attributed to a specific, additional property, which we shall discuss in Sect. 5 (the difference between single-pair and pair-list readings is touched upon in conclusion).

Property A shows that both *wh-in-situ* and *wh-ex-situ* questions involve movement. Property B shows that covert movement in *wh-in-situ* questions is more restricted than overt movement in *wh-ex-situ* questions. Property C shows that (covert) movement in *wh-in-situ* questions is in fact *wh*-movement. On the other hand, weaker sensitivity to weak islandhood and lack of Superiority effect point to a movement of a different nature for *wh-ex-situ* (see configuration 25). Economy and parsimony also dictate such a conclusion. Since covert movement checks the *wh*-feature, we conclude that Colloquial French is a *wh-in-situ* language and that another type of feature is necessary to trigger overt movement.

This is reminiscent of the alternation mentioned in Sect. 1 with *wh-ex-situ* questions analyzed as more marked than *wh-in-situ* questions based on the cross-linguistic observation that when a language has the parameter '(unmarked) *wh-in-situ*,' it also displays marked, overtly-moved counterparts via fronting, as in Armenian in (5b) (Megerdoomian and Ganjavi 2000), or via scrambling, as in Korean in (33) (Beck 2006, glosses as in original).

(i) *T' as donné à qui quoi?
you have given to whom what

[33] (a) is sometimes rated as slightly better than (b), but both are deemed acceptable.

(33) a. *Minsu-man **nuku-lül** po-ass-ni?
Minsu-only who-Acc see-Past-Q
'Who did only Minsu see?'
b. **nuku-lül** Minsu-man po-ass-ni?
who-Acc Minsu-only see-Past-Q
'Who did only Minsu see?'

Uncovering the content of the markedness assumed for *wh-ex-situ* in Colloquial French will be the goal of the remainder of the article. Our task is to clarify the properties of the additional feature advocated in Sect. 3.2 in the frame of Relativized Minimality. *Wh*-fronting without *wh*-movement is not a new idea though. Bošković (2002) attributed movement to focus in multiple *wh*-fronting languages, such as Bulgarian, and Hamlaoui (2010, 2011) tied *wh*-fronting and focus together in French in an OT framework. We shall agree with these proposals in Sect. 4, and elaborate on Focus in Sect. 5.

4 Semantic properties of wh-ex-situ questions: Acquaintance with contrast

This section aims to clarify which contexts license *wh-ex-situ* questions in order to uncover their semantics in Colloquial French. We shall examine three contexts where *wh-ex-situ* are possible and (unstressed) *in-situ* impossible. First, *wh-ex-situ* is acquainted with contrast in exclusive-pairing contexts in child speech (Sect. 4.1) and explicitly contrastive scenarios in adult speech (Sect. 4.2). Note that, in these contexts, contrast on other elements in the question is just a hint at the contrast on the *wh*P. Second, an exclusive selection in a set also triggers *wh*-fronting (Sect. 4.3). It should be emphasized that stressed *wh-in-situ* often (though probably not always) seems to appear in free alternation with *wh-ex-situ* in these situations. The emphasis that goes along with stress also points towards focus. Stress must then be carefully controlled for when evaluating the *in-situ* examples.

4.1 Exclusive pairing in child speech

Let us start with child speech, which offers the clearest patterns. In our corpus (detailed in fn. 11), children often ask questions out of the blue, as in (34). The situation is as follows: The child (WIL, 2;10.18) is playing, stops, turns to the adult, and asks the question. These questions feature *in-situ wh*-words.

(34) Ma photo elle est **où**?
my photo she is where
'Where is my photo?'

Nevertheless, the corpus also displays *ex-situ wh*-questions, as in (35), uttered in a row by the same child (MAS, 2;7.5):

(35) a. **Où** il est le poisson?
where he is the fish

b. **Où** il est le perroquet?
where he is the parrot

c. **Où** elle est la tortue?
where she is the tortoise
'Where is the fish? Where is the parrot? Where is the tortoise?'

In (35), the child was given a board with six animal pictures to match with six individual cards, which means that we have two sets of items, each member of which has a unique correspondent in the other set. In other terms, we have a mapping of the member of a set onto the member of another set. Moreover, the position of an item is only understandable with respect to another one, namely in contrast with another one. In our view, this contrast triggers the fronting of the *wh*-word *où* 'where' because it requires information about the relative position of the card on the board.[34]

4.2 Explicitly contrastive contexts

Hamlaoui (2011:fn. 22) noted that explicit contrast triggers obligatory *wh-ex-situ* questions in adult French. We reproduce the author's minimal pair A1/A1′[35] in (36).

(36) A0: Tu vas faire **quoi**, pendant les vacances?
you will do what during the break
'What will you be doing during the break?'
A1: (En)fin, **qu'est-ce (que)** t(u) AIMERAIS faire?
actually what you would.like do
'Actually, what would you like to do?'
A1′: #/*(En)fin, t(u) AIMERAIS faire **quoi**?
actually you would.like do what
'Actually, what would you like to do?'

Hamlaoui (2011) considered the relationship between modal verbs and the *in/ex-situ* alternation and convincingly argued that modal verbs such as *tu aimerais* 'you would like' do not favor *wh*-fronting per se. They favor fronting only when they are *contrastively focused*, as in A1, where *aimerais* 'would like (to do)' is focused in contrast with the preceding verb *vas* 'will (do)' in A0.[36] We observe that the speaker wants to identify an object (what the addressee would like to do), whose identity *may* be different from that of another object (what the addressee will actually do). Thus, the

[34]This is in line with (Palasis et al. 2019): In child speech, *wh-ex-situ* questions are favored when the sentence has more content, namely when it contains elements that can be contrasted with others in the context. On the other hand, presentational sentences with the fixed (and semantically empty) *be* form *c'est* 'it is' strongly favor *wh-in-situ*.

[35]Numbering as in the original document, glosses and translations adapted. Once again, in A1′ the *wh-in-situ* question with a modal is rescued if *quoi* is stressed.

[36]*Aimerais* bears a C accent (Marandin et al. 2004), the French accent corresponding to the (rise-fall) contrastive topic B-accent in English (Büring 2003; Jackendoff 1972).

contrast between *aimerais* and *vas* goes along with a contrast between the content of *qu'est-ce que* in A1 and *quoi* in A0.[37]

4.3 Teasing apart Contrast on the wh-item and Contrast on the non-wh-part

The previous two sections have shown that when a non *wh*-element is contrasted in a question (i.e., when it is a contrastive topic), the contrast is not limited to the non-*wh* part of the question and *wh*-fronting occurs. The contrasted non-*wh* part plus the *wh*P form a pair that is in turn contrasted with another alternative pair (e.g., 35: <the fish card, the fish square> vs. <the parrot card, the parrot square>, etc.).[38] These examples show that fronting requires the *wh*P to be an active part of the contrast, otherwise fronting does not occur. The following scenario and examples buttress the argument:

(37) Dinner scenario: *Three guests: Marie, Paul and Guillaume. The host cooks the main course and asks the guests to bring three items: wine, dessert and cheese*.

(38) Question: *qui a apporté quoi?* 'who brought what?'. If we take the guests to be the sorting key, this question is a "strategy" (in Roberts's 1996 and Büring's 2003 terms) that contains the following set of subquestions:

a. What did Marie bring?
b. What did Paul bring?
c. What did Guillaume bring?

Let us know consider the next two subscenarios:

(39) Subscenario 1: *The host said: "I need wine, dessert and cheese. Bring what you want*."

The key point is that the three required items might not distribute complementarily across the guests, that is they might all bring wine for example. In this scenario, the subquestions (38a–c) can translate as (40), where *Marie*, *Paul* and *Guillaume* all bear a C-accent, that is, they are contrastive topics (CT).[39]

(40) a. Elle a apporté **quoi**, Marie?
b. Il a apporté **quoi**, Paul?
c. Il a apporté **quoi**, Guillaume?

In these (sub)questions, note that the *wh*- is *in-situ* despite the CT. Examples (40) thus illustrate that CT per se does not trigger *wh*-fronting. Let us now consider Subscenario 2:

[37] On the basis of expressive contexts, Obenauer (1994:357) already suggested that in *ex-situ wh*-questions the referent is outside the domain Δ examined by the speaker, whereas *in-situ wh*-questions locate the variable in a non-empty domain Δ.

[38] Actually, these questions can be described as subquestions belonging to the "strategy" *what is where?*, in Roberts's (1996) and Büring's (2003) terms.

[39] See fn. 36. This fact contrasts with English, which does not allow for B-accents in questions, even on contrastive topics (Constant 2014).

(41) Subscenario 2: *The host said: "I need wine, dessert and cheese. May each of you choose an item, so that we have everything for dinner.*"

In this scenario, the subquestions (38a-c) can translate as (42), where *Marie*, *Paul* and *Guillaume* are again contrastive topics.

(42) a. **Qu'est-ce qu'**elle a apporté, Marie ?
b. **Qu'est-ce qu'**il a apporté, Paul ?
c. **Qu'est-ce qu'**il a apporté, Guillaume ?

The difference between Subscenario 1 (*wh-in-situ*) and Subscenario 2 (*wh-ex-situ*) is that the three items (wine, dessert and cheese) are mutually exclusive in the latter only. They are in complementary distribution: If Marie brings wine, Paul cannot bring wine and he has to bring cheese or dessert. The contexts for (40) and (42) thus disentangle Contrast on the non-*wh*-part of the question and Contrast on the *wh*-item. Although Contrast on the non-*wh*-part favors Contrast on the *wh*-item, it does not necessarily trigger *wh*-fronting (40), whereas Contrast on the *wh*-item does (42) because the items underlying the *wh*- (wine, dessert and cheese) are in mutually exclusive distribution.

To make it clearer, here is another situation where *wh*-fronting is available in simple questions with no contrast on the *non-wh* part. Consider context (43) and questions (44) and (45):

(43) A: "At work, I had a computer issue. I had to go to Marie, Paul or Guillaume to solve it."

(44) B: "Ah oui? Et **qui** t' as vu, finalement?"
really and who you have seen eventually

(45) B: ??#"Ah oui? Et t' as vu **qui**, finalement?"
really and you have seen who eventually

B has to select one of three individuals and does not know which one. S/he asks the question in order for A to perform this operation for him/her. In this context, (45)[40] with the prosody described for (4aα) is felt to be degraded. In contrast, (44) is perfectly natural, which shows that *wh-ex-situ* questions are optimal when there is a selection in a set, EXCLUDING the rest of the set.

4.4 Intermediate summary

In Sect. 4, we observed that *wh*-fronting occurs when:

1) There is a one-to-one mapping from one set onto another set (4.1, 4.3).
2) There is a potential contrast between two (sets of the) possible referents of the *wh*P (4.2).
3) The speaker's question implies that the addressee can select one item only from a set, and hence has to exclude the rest of the set in order to answer the question (4.3, ex. 44).

[40] As repeatedly said above, (45) is also possible if *qui* is stressed, since we are in a partitive context in the sense of Baunaz (2011, 2016) (see fn. 7).

Section 5 will aim to provide a formalization that captures the above observations.

5 Formalizing an exclusivity operator

In the previous section, we highlighted that contrast seems to be the hallmark of *wh-ex-situ* in Colloquial French and that it is thus absent in (unstressed) *wh-in-situ*. Section 5 will address the matter of what it means for a *wh*-item to be contrasted and will attempt to formalize this contrastive feature. We shall review two hypotheses: 1) The feature is a Contrastive Topic feature, 2) The feature is an idiosyncratic feature, and elaborate on the latter.

5.1 Hypothesis 1: Contrastive Topic

A brief presentation of Rooth's (1985, 1992) semantics for focus and Constant's (2014) semantics for contrastive topics (henceforth CT) is in order before we concentrate on CT in *wh*-questions.

5.1.1 Rooth's semantics for focus and Constant's semantics for Contrastive Topics

The crucial idea in Rooth (1985, 1992) is that focus marking on a phrase yields a set of alternatives (focus is indicated with the subscript $_F$). To see how these alternatives work, let us consider (46).

(46) Marie [est venue]$_F$.
Marie has come

A sentence like (46) has two semantic values corresponding to two levels of interpretation. For its ordinary semantic value, the meaning of the sentence obtains via the usual rules of composition. Thus, (46) has the meaning (47) (ignoring tense and intensions). The focus semantic value (noted ^{F}) is obtained by generating a set of propositions that includes the asserted proposition and all the propositions that can be obtained by substituting the possible alternatives for the focused item, thus yielding (48).

(47) $[[\text{Marie [est venue]}_F]]^\circ = \text{come(m)}$

(48) $[[\text{Marie [est venue]}_F]]^F = \{\lambda w.P(m)(w) | P_{<e<s,t>>}\} = \{$Marie came; Marie left; Marie smiled$\}$

Let us now see what happens if some phrase in the sentence is additionally CT-marked. According to Constant (2014), sentences with a CT contain an operator responsible for the movement of the phrase that bears the CT feature, movement which triggers a λ-abstraction (much like Quantifier Raising). (49) gives the semantics of this operator and (50) a simple example.

(49) a. $[[\text{CT-}\lambda i\ \varphi]]^\circ{}_g = \lambda x.[[\varphi]]^\circ{}_{g[i \text{ -> } x]}$ (ordinary semantic value)
b. $[[\text{CT-}\lambda i\ \varphi]]^F{}_g = \{\lambda x.[[\varphi]]^F{}_{g[i \text{ -> } x]}\}$ (focus semantic value)

(50) $[\text{Marie}_4]_{CT}$ CT-λ_4 t_4 $[\text{est venue}]_F$.

Like Rooth (1985, 1992), Constant (2014) assumes a two-tier semantics. The first tier is the ordinary semantics in (49a). At this level, (50) means *come*(*m*), much like (47). The second tier is the level where the foci (including CT) are evaluated (49b). In the example, two phrases bear a focus feature: the DP *Marie* and the VP *est venue*. Combining the focus semantic value of *est venue* (see 48) with the operator gives (51b), which can then combine with the focus semantic value of *Marie* (say, the set {Marie, Pierrette}) by pointwise functional application, yielding the set of sets of propositions (51c).[41]

(51) a. $[[(50)]]^{\circ} = come(m)$
b. $[[\text{CT-}\lambda_4\ t_4\ [\text{est venue}]_F]]^F = \{\lambda x.\ \{x \text{ came; } x \text{ left; } x \text{ smiled}\}\}$
c. $[[(50)]]^F = \{\{\text{Marie came; Marie left; Marie smiled}\}, \{\text{Pierrette came; Pierrette left; Pierrette smiled}\}\}$

5.1.2 A CT-feature on wh?

Let us now move on to *wh*-questions. According to Rooth (1992) and Vallduví and Vilkuna (1998), *wh*-items are intrinsically endowed with a focus feature that "generates a 'wh-set,' a domain over which they 'quantify'" (Vallduví and Vilkuna 1998:86). Consequently, the meaning of a question is the set of propositions that constitutes the possible answers (Hamblin 1973). In order to understand its mechanics, let us consider question (52a) and its LF (52b). Let us moreover assume that the denotation of *who* in w is the set of individuals given in (53) and that the denotation of *you saw* (ignoring tense) is as (54). By pointwise functional application of (54) to (53), we obtain (55), the meaning of (52). Note that (55) is a set of propositions, much like (48) the focus semantic value of (46).

(52) a. Who did you see?
b. Q who_i did you see t_i?

(53) $[[\text{who}]]^w = \{\text{Guillaume; Paul; Marie}\}$

(54) $[[\text{you saw}]]^w = \lambda x_e.\text{you saw } x\ (w)$

(55) $[[\text{Who did you see}]]^w = \{\text{you saw Guillaume; you saw Marie; you saw Paul}\}$

Now, we saw abundant evidence in the previous sections that some *wh*-items are contrastive while others are not.[42] Consequently, we propose that the *wh* may be both focused and contrastive in some questions. If, as we saw, focus is responsible for questions denoting sets of propositions, contrast (another type of focus) would make them a set of sets of propositions. This idea was tentatively entertained as a theoretical possibility in Constant (2014:112–113), who hypothesized that *wh*-items could be endowed with a CT feature on top of their focus feature. Under this hypothesis, (52)

[41] The result is close to Büring's (2003), but is syntactically anchored and achieved compositionally.

[42] For independent evidence on a distinction between contrast and focus, on both the prosodic and the interpretive sides, see Erteschik-Shir (2007), Katz and Selkirk (2011), É. Kiss (1998); Kratzer and Selkirk (2010), Lee (1999), Molnár (2002), Rochemont (1986), Selkirk (2008) and Vallduví and Vilkuna (1998).

has two possible LFs. The first one is (52b) with the meaning (55) and the second one is (56a) with the meaning (56b):

(56) a. Q who$_1$ CT-λ_1 you saw t$_1$.
b. [[Q who$_1$ CT-λ_1 you saw t$_1$]]^F = {{you saw Guillaume}, {you saw Marie}, {you saw Paul} ...}
≈ For each person, did you see him/her?

Under interpretation (55), (52) will translate in French as the *wh-in-situ* question (57), whereas under interpretation (56), it will take the form of the *wh-ex-situ* question (58) (for a context in which such a question can be used, see the discussion around 44).

(57) T' as vu **qui**?
you have seen who

(58) **Qui** t' as vu?
who you have seen

One advantage of this hypothesis is that the CT feature exists independently from questions. French CT occupies a position above IP, arguably the same as in English in (59).

(59) a. What did you give to Marie and Paul?
b. [À Marie]$_{CT}$, j' ai donné un livre, [à Paul]$_{CT}$ j' ai donné un CD.
to Marie I have given a book to Paul I have given a CD

Nevertheless, though appealing, there are several reasons to be suspicious about this idea of a *wh*-item marked as CT. First, we have no independent evidence that a CT feature can be assigned to a *wh*-item in a question in French, although we know that an element of the non-*wh* part of the question can receive such a feature (see 35, 36, 40 and fn. 36).

Second, CT can be assigned to multiple elements in a French assertive clause, as shown in (60), which is not the case for questions. Otherwise, we would expect multiple *wh*-fronting, even if it can be banned for independent reasons.

(60) a. When did you give the book and the CD to Marie and Paul?
b. [À Marie]$_{CT}$, [le livre]$_{CT}$ je l' ai donné lundi,
to Marie, the book I it have given Monday
[à Paul]$_{CT}$ [le CD]$_{CT}$ je l' ai donné mercredi.
to Paul the CD I it have given Wednesday

The third (related) objection is that the instantiation of the *wh* in the answer cannot be a CT, but must be focus. (58) cannot be felicitously answered with (61) (which we indicate with #). Note that a sentence like (61) is felicitous in certain circumstances, notably when it is an instance of 'Lone CT' (Constant 2014 contra Wagner 2012).

(61) # [Marie]$_{CT}$ je l' ai vue.
Marie I her have seen

To conclude this section, although the idea of imposing a CT feature on the *wh*-item in French *wh-ex-situ* is appealing, it cannot be fully probed, and runs into too many objections. Instead, we shall pursue the second hypothesis, namely that there is an idiosyncratic feature on Colloquial French *wh-ex-situ* items.

5.2 Hypothesis 2: Exclusivity

In the previous section, we tackled the idea that *wh*-items are intrinsically focused and can be contrastive on top of that, in a Hamblin semantics for questions, in which *wh*-items are variables. However, our findings in Sect. 3 showed that Colloquial French displays covert *wh*-movement, which points more towards *wh*-items being quantifiers than variables. This is why we adopt Karttunen's (1977) semantics for questions, in which *wh*-words are treated as existential quantifiers and *wh*Ps as generalized quantifiers of type <<e,t> t>. In this framework, a question also denotes a set of propositions, but this set is created by the question operator and not by the *wh*-variable.

Before we proceed, it is important to note that the operator we are going to discuss is not a question operator. It is a separate, focus operator that feeds the question operator in the same way as the operator *que* 'only' applies in (62). This does not mean that *que* or our operator interact in a neutral way with the problem of whether the question is weakly exhaustive, strongly exhaustive, or non-exhaustive,[43] but they are clearly distinct (see the discussions in 5.3.2 and 5.3.3).

(62) T' as été que **où**?
you have been only where
'Where have you only been?'

Building on the results in Sect. 4, (58) roughly means "Which x, y and z ∈ {Marie; Paul; Guillaume} are such that you saw x, but not y and z." We propose that this meaning can arise through composition with a contrastive operator that overtly attracts the *wh*. Since the role of this operator is to exclude alternatives, we dub it Exclusivity (henceforth [Excls]). It is also more precise and has the advantage of avoiding the overused term *contrast*. (63) provides a formalization for this Exclusivity operator:[44]

(63) Exclusivity operator:
$[[\text{Excls}]] = \lambda P_{<\tau\ <s,t>>}.\lambda z_\tau.\lambda w'_s{:}\exists y \in D^c_\tau[y \neq z \wedge \neg P(y)(w')].P(z)(w')$.
Where D^c_τ represents the set of the contextually relevant items of type τ.

The operator is polymorphic since questions can bear on items of any type τ. It says that the property obtained once we have abstracted over the IP is true of a referent to the exclusion of some other(s). The first, presupposed part of the formula ($\exists y \in D^c_\tau[y \neq z \wedge \neg P(y)(w')]$) requires further discussion.

[43] Unless we transfer to an operator below the question operator part of the burden attributed to it in the discussions around weak/strong/absence of exhaustivity in questions. This research program is beyond the scope of this article, but see the commentary to the answer-set (74).

[44] We follow Heim and Kratzer's (1998) convention in placing the presuppositional part of the formula between ':' and '.' (to be discussed below).

5.3 Presuppositions in questions

This section explores the presuppositional status of the subpart $\exists y \in D^c_\tau[y \neq z \wedge \neg P(y)(w')]$. First, we unfold our approach in an answer-based theory of presuppositions in questions (5.3.1). Second, we motivate the existential quantifier and show that it implies that Exclusivity is distinct from Exhaustivity (5.3.2). Third, we develop the answer-set approach and the predictions [Excls] makes on a specific example to better illustrate its behavior (5.3.3).

5.3.1 Favoring an answer-based approach

We formalized presupposition as a definedness condition on questions, making use of Heim and Kratzer's (1998) convention. Presuppositions in questions are far less studied than in declarative sentences. There are two families of approaches, either answer-based or question-based (phrasing as in Fitzpatrick 2005):

(64) Answer-based approach:
A presupposition of a question is something that is entailed by every possible answer to it. (Keenan and Hull 1973)

(65) Question-based approach:
A presupposition of a question is a necessary condition for a successful interrogative speech act. (Katz 1972)

While the latter posits that a question can inherit the presupposition from its constituents, the former assumes that no presupposition projects in questions, but that a question is infelicitous only if none of its answers is defined. Here is Guerzoni's (2003) Question Bridge Principle (based on Stalnaker 1978):

(66) Question Bridge Principle:
A question in felicitous in c ONLY IF it can be felicitously answered in c (i.e., if at least one of its answers is defined in context c).

Although both could be necessary,[45] the answer-based approach is less redundant because in most cases the question-based approach predicts two reasons for the infelicity of the question: The question is undefined AND its possible answers are undefined (Guerzoni 2003, here simplified a lot). For this reason, we follow answer-based approaches, although our results are in principle harmlessly translatable to the other framework.

5.3.2 Existential quantification and Exhaustivity

Regarding the quantifier in $\exists y \in D^c_\tau[y \neq z \wedge \neg P(y)(w')]$, existentiality must be posited for both logical and empirical reasons. First positing a universal quantifier

[45] See Fitzpatrick (2005) on *how-come* and *why*-questions. To our knowledge, a detailed study of this phenomenon and whether the various presupposition triggers have the same effect is still to be done.

would result in a contradiction.[46] Assuming the set D of three individuals {Guillaume; Paul; Marie}, if each proposition about one x in D in the question denotation of *Who did you see?* is defined only if some y $\neq$ x in D was not seen, the projection must be existential. Indeed, if it were universal we would end up presupposing for each x in D that there is a y $\neq$ x in D such that y was not seen, which is contradictory. Second, an answer like (67) is perfectly felicitous for (58) because (67) displays an exclusion, but not of all the alternatives in the set (55), as shown by the possibility of remaining agnostic about Guillaume.[47] Consequently, [Excls] implies that *at least one* element must be excluded.[48]

(67) J'ai vu Marie, j'ai pas vu Paul, mais je me souviens pas pour Guillaume.
'I saw Marie, I didn't see Paul, but regarding Guillaume, I cannot remember.'

A note is in order here on how Exclusivity relates to Exhaustivity because the latter can also involve exclusion. On the one hand, a question like (52) *Who did you see?* can be answered exhaustively in two ways, assuming that the speaker saw Marie: (68a) is the weakly exhaustive answer and (68b) is the strongly exhaustive one.[49]

(68) a. I saw Marie.
b. I saw Marie, but not Paul and Guillaume.
c. I saw Marie, but not Paul.
d. I saw Marie, but not Guillaume.
e. I saw Marie, Paul and Guillaume.

On the other hand, (68c) and (d) are exclusive but partial, non-exhaustive answers. Finally, if the correct answer is (68e), it is exhaustive but not exclusive (all three accessible individuals were seen, none being excluded). Consequently, Exclusivity does not imply Exhaustivity and Exhaustivity does not imply Exclusivity. They are two distinct operations. We argue that this applies to declarative sentences, as illustrated in (68), and questions. Put otherwise, the structure under examination here, *wh-ex-situ*, is not a mark of exhaustivity in Colloquial French questions.

A confirmation comes from a close, but distinct construction, namely clefts. One (frequent) means to mark exhaustivity in French questions is to cleft the *wh*-item, as illustrated in (69a) (Rouquier 2014). (69b) then shows that Exhaustivity and [Excls] are separate features and that both can aggregate to form an interrogative

[46] This was pointed out to us by an anonymous reviewer.

[47] Part of the discussion here was inspired by Yabushita's (2017) discussion on contrastive operators. Note that (55), which serves as a baseline for the present discussion, is provisional and is revised in (72)/(74).

[48] See Hara (2006), Lee (1999, 2017), and Molnár (2002) on the 'at least' condition.

[49] A weakly exhaustive answer contains all the positive answers to a question, whereas a strongly exhaustive answer contains both the positive and the negative answers to a question (Beck and Rullman 1999; George 2011; Groenendijk and Stokhof 1984; Heim 1994; Sharvit 2002, among others). To account for exhaustive answers, Heim (1994) and Dayal (2016) designed specific answerhood operators. Alternatively, one can imagine a covert *wh-only* operator that is below $C_{[+WH]}$ and accounts for exhaustivity (Nicolae 2015).

cleft with additional *wh*-fronting.[50] The combination of Exhaustivity and Exclusivity yields (70), the answer-set to (69b), to be compared to (74) (without Exhaustivity) and (72) (without Exhaustivity and Exclusivity).

(69) a. [C' est **qui** que] t' as vu?
it is who that you have seen

b. [**Qui** c' est que] t' as vu?
who it is that you have seen

(70) $[[\text{Who Excls did you see}]]^{w}$ = {you saw Guillaume but not Marie and Paul; you saw Marie but not Guillaume and Paul; you saw Paul but not Marie and Guillaume; you saw Guillaume and Marie, but not Paul; you saw Guillaume and Paul but not Marie; you saw Marie and Paul but not Guillaume}

5.3.3 In-situ and ex-situ Answer-sets

To illustrate the effect of the presupposition $\exists y \in D^{c}_{\tau}[y \neq z \wedge \neg P(y)(w')]$, let us reuse scenario (43), and questions (44) and (45), repeated here and modified to (43′), (44′) and (45′) (underlined part added, judgments reassessed):

(43) A: "At work, I had a computer issue. I had to go to Marie, Paul or Guillaume to solve it."

(44) B: "Ah oui? Et **qui** t' as vu, finalement?"
really and who you have seen eventually

(45) B: ??#"Ah oui? Et t' as vu **qui**, finalement?"
really and you have seen who eventually

(43′) A: "At work, I had a computer issue. I had to go to Marie, Paul or Guillaume, <u>or the three of them</u> to solve it."

(44′) B: ??#"Ah oui? Et **qui** t' as vu, finalement?"
really and who you have seen eventually

(45′) B: "Ah oui? Et t' as vu **qui**, finalement?"
really and you have seen who eventually

We have to clarify why *in-situ* (45′) is better than *ex-situ* (44′) in the latter scenario, whereas *ex-situ* (44) is better than *in-situ* (45) in (43). To explain this observation, let us consider the answer-sets corresponding to (44)/(44′) and (45)/(45′), starting with (45)/(45′). (55) was a first approximation, not taking into account that *qui* 'who' is ambiguous between singular and plural. First, we assume here

[50] Zumwald Küster (2018:105) proposes that the third form with additional *est-ce* inversion (e.g., *qui est-ce que*) is not used as a clefting device but as an unanalyzed chunk that allows the speaker to dispense with subject-verb inversion (*qui est-ce que t'as vu?* vs *qui as-tu vu?*).

that the correct answer is selected by Dayal's (1996) answerhood operator (71), which picks up the maximally informative answer in the answer-set, that is (72) for (45)/(45′).

(71) $\mathrm{Ans}(Q) = \lambda w.\iota p[p_w \wedge p \in Q \wedge \forall p' [[p'_w \wedge p' \in Q] \rightarrow p \subseteq p']]$

(72) $[[\text{Who did you see}]]^w = \{$you saw Guillaume; you saw Marie; you saw Paul; you saw Guillaume and Marie; you saw Guillaume and Paul; you saw Marie and Paul; **you saw Guillaume, Marie and Paul**$\}$

Second, to construe the answer-set to (44)/(44′), let us consider answers like (73a).

(73) a. Excls J' ai vu Marie.
I have seen Marie

b. Marie [Excls [IP j'ai vu t.

To be felicitous, (73a) must mean 'I saw Marie and there is someone else (either Guillaume or Paul) that I did not see.' Put otherwise, *Marie* is attracted to the specifier of Excls°. (73b) is (73a)'s LF. Note that *Marie* is *in situ* in (73a) whereas *qui* is *ex-situ* in the corresponding question. But in the context of (44) *Marie* carries the rise-fall accent marking specificity that the out-of-the-blue utterance would not display (see the analysis of example 4b and fn. 7). The reason why questions have both the options of fronting and accenting, whereas only accenting is available to the answer is left to future research. The answer-set corresponding to (44)/(44′) is thus (taking the exclusion "but not" into account, boldface and underlining explained below):

(74) $[[\text{Who Excls did you see}]]^w = \{$**you saw Guillaume but not Marie; you saw Guillaume but not Paul;** <u>you saw Guillaume but not Marie and Paul</u>; you saw Marie but not Guillaume; you saw Marie but not Paul; you saw Marie but not Guillaume and Paul; you saw Paul but not Marie; you saw Paul but not Guillaume; you saw Paul but not Marie and Guillaume; you saw Guillaume and Marie, but not Paul; you saw Guillaume and Paul but not Marie; you saw Marie and Paul but not Guillaume$\}$

The two answer-sets being in place (72 to the *in-situ* question and 74 to the *ex-situ* question), let us come back to Scenarios (43) and (43′), starting with (43).

Scenario (43) implies that the speaker did not meet all three individuals, and hence cannot entail the proposition *you saw Guillaume, Marie and Paul*. This latter proposition being part of the answer-set (72) to the *in-situ* question (45), this question is not optimal in this context because it includes an answer that is undefined. Conversely, a question like (44) featuring [Excls] will be felicitous. All the propositions in its answer-set (74) are defined in context (43). Suppose now that Guillaume is the only person that the speaker saw. In this frame, the bolded and underlined answers in (74) are the correct answers to *ex-situ* (44). Note that if the question is also exhaustive, the correct answer will be the underlined one only.

In contrast, in the frame of (43′), A's utterance entails that the proposition 'you saw Guillaume, Marie and Paul' is a contextually possible answer, that is, there is

a possible answer that is in the denotation of the *in-situ* question (45′), but not of the *ex-situ* question (44′). Consequently *in-situ* (45′) comes out as more optimal than *ex-situ* (44′).

Note that in the frame of (43), uttering *in-situ* (45) is not impossible but would sound like a presupposition cancellation; that is, the pre-construed answer-set, which is narrower and more specific than *in-situ* (45), will be enriched with the proposition 'you saw Guillaume, Marie and Paul.' Conversely, *ex-situ* (44′) is not impossible, but sounds bizarre because the pre-construed answer-set of possibilities in the frame of (43′) is larger than what (44′) denotes (it includes 'you saw Guillaume, Marie and Paul'). Uttering (44′) then has the effect of narrowing down the pre-construed answer-set. In a nutshell, depending on the contexts, either *in-situ* or *ex-situ* questions will sound degraded, because a pragmatic adjustment will be required. Nevertheless, because this operation is available, the judgments are never as clear-cut as in the case of a presupposition cancellation like (75), where there is a contradiction between the presupposition 'Jean smoked' and b's utterance.

(75) a. Jean il a arrêté de fumer. b. #En fait, il a jamais fumé.
'Jean stopped smoking. Actually, he has never smoked.'

Finally, imagine that *ex-situ* (44) is answered with (76a) (which does not belong to its answer-set). Here again an adjustment is necessary and (76a) sounds like (76b), with the corrective *même* 'even' in the context of (43). Likewise, this adjustment is not as sharp as a presupposition cancellation. This comes as natural in the answer-based approach to questions presuppositions (64), since in this frame (44)'s presupposition is only pragmatic, i.e., construed on the pre-construed answer-set (74). More research is needed however to better understand how this transfer between the answers and the question works exactly.

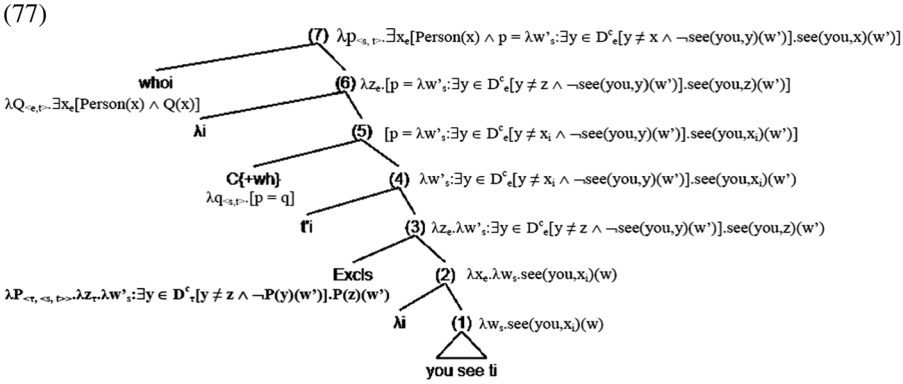
(76) a. J' ai vu Marie, Paul et Guillaume.
I have seen Marie Paul and Guillaume

b. J' ai vu Marie, Paul et même Guillaume.
I have seen Marie Paul and even Guillaume

5.4 Representing the Exclusivity operator

Figure (77) shows how this operator works in example (44). [Excls] is placed above IP to account for the landing site of the *ex-situ wh*P. If it were not for this surface position, other locations could have been envisaged, like above vP. Let us note that $\exists y \in D_e^c[y \neq x \wedge \neg see(you,y)(w')]$ is embedded as expected in an answer-based approach to presuppositions in questions (it does not project and is therefore not a definedness condition for the question itself, but rather for its answers).

(77)



Remarks:

- We ignore tense.
- We set up the operator to type e.
- We treat the traces as free variables of type e, which we represent with an x bearing the index of their binder.
- We follow Karttunen's (1977) semantics for questions revised as in Dayal (2016). In particular, we do not claim that questions denote the set of their true answers but only of their possible answers, as in Hamblin (1973).
- The *wh*-item undergoes two movements, first to the [Excls] operator's specifier, second (covertly) to the interrogative complementizer C[+wh]'s specifier.
- The appended λ (under nodes 2 and 6) represent the abstraction triggered by these movements (see coindexation).

The steps of the composition are as follows (numbers refer to 77):

(2) $\lambda x_e.\lambda w_s.\text{see}(\text{you},x_i)(w)$ (predicate abstraction)
(3) $[[\text{Excls}]]\ ([[2]]) = \lambda z_e.\lambda w'_s{:}\exists y \in D^c_e[y \neq z \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},z)(w')$ (functional application)
(4) $[[3]]\ ([[t_i]]) = \lambda w'_s{:}\exists y \in D^c_e[y \neq x_i \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},x_i)(w')$ (functional application)
(5) $[[C[+wh]]]\ ([[4]]) = [p = \lambda w'_s{:}\exists y \in D^c_e[y \neq x_i \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},x_i)(w')]$ (functional application)
(6) $\Rightarrow \lambda z_e.[p = \lambda w'_s{:}\exists y \in D^c_e[y \neq z \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},z)(w')]$ (predicate abstraction)
(7) $[[\text{who}_i]]\ ([[6]]) = \exists x_e[\text{Person}(x) \wedge p = \lambda w'_s{:}\exists y \in D^c_e[y \neq x \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},x)(w')]$ (functional application)

The outcome is in (78) (abstraction over the free variable p and creation of a set of propositions/a question). In words, (44) means that the speaker is asking the hearer which person the hearer has seen, presuming that there is also at least one person that the hearer could have seen but has not seen.

(78) $\lambda p_{<s,t>}.\exists x_e[\text{Person}(x) \wedge p = \lambda w'_s{:}\exists y \in D^c_e[y \neq x \wedge \neg\text{see}(\text{you},y)(w')].\text{see}(\text{you},x)(w')]$

In this section, we proposed a formalization of the observations presented in Sect. 4 on the contrast that drives overt *wh*-fronting in Colloquial French. Trying to import a CT feature, we found out that contrast in questions is better viewed as a presupposition triggered by an Exclusivity operator that excludes at least one of the possible answers.

6 Conclusions

This article examined *in-situ* and *ex-situ wh*-questions in Colloquial French, a language that undoubtedly displays both structures, as shown in Sect. 2. The aims were twofold: establish which *wh*-position is the unmarked, default one, and describe the characteristics of the other, marked *wh*-position.

In Sect. 3, we showed that (a subset of) *wh-in-situ* questions are sensitive to constraints on *wh*-movement (i.e., weak-islandhood and Superiority), which indicates that *in-situ* questions are cases of unmarked questions with covert *wh*-movement. We also examined *wh-ex-situ* questions and showed that they are insensitive to these constraints, which makes them instances of a special type of question, where *wh*-fronting is not driven by a *wh*-feature, but by another feature. Consequently, we suggested that Colloquial French is a *wh-in-situ* language and that *wh-ex-situ* is *wh*-fronting, not *wh*-movement. These results provide arguments against the optionality stance.

In Sect. 4, we examined which feature could be triggering *wh*-fronting in Colloquial French, and we showed that it is a type of contrast, namely Exclusivity, which implies that at least one of the possible answers is excluded, thus putting the focus on the correct ones. Interestingly, this exclusive/contrastive feature, although cognate to well-known features like Contrastive Topic, is not reducible to them. This way, we have contributed to the debate on information structure in questions (Beyssade 2006; Constant 2014; Engdahl 2006) by showing that phenomena like focus or contrast need to be adjusted to be able to fit in with the semantics of questions, sometimes giving rise to specific pragmatic effects. In Sect. 5, we formalized the Exclusivity operator [[Excls]] as a definedness condition (63).

Finally and more generally, this article opens a program of research on the varieties of questions across languages. First, it might be interesting to consider other *wh-in-situ* languages that also display *wh-ex-situ* questions (see Sect. 1) in light of the Exclusivity operator defined in Sect. 5. It is promising to note that (Cheung 2008) argues that *wh*-fronting marks contrastive focus in Chinese, a result close to ours.

Another question concerns pair-list readings, which most speakers highly prefer for *wh-ex-situ* multiple questions (Sect. 3.2), whereas single-pair readings are freely accessible for *wh-in-situ* ones. Moreover, the strong-island facts in (16) showed that in LF both *wh*-words have to be in CP in *ex-situ* multiple *wh*-questions much like what is required to have a pair-list reading (Dayal 2003, 2006; Kitagawa et al. 2004; Kotek 2017). Yet, it is difficult to derive this reading from our Exclusivity operator, unless the contrast the operator involves just favors it. More work is definitely needed to assess this hypothesis.

Embedded questions also challenge the present analysis because they supposedly never feature *wh-in-situ* (Bobaljik and Wurmbrand 2015), although they can have

the semantics of *wh-in-situ* direct questions (see Baunaz 2011:227, fn. 213). Yet, recently-collected data show that *wh-in-situ* is gaining ground in embedded questions (Gardner-Chloros and Secova 2018; Poletto and Pollock to appear). Further research could establish whether embedded *in-situ* introduces an alternation equivalent to what is found in direct questions.

Finally, the *ex-situ*/*in-situ* alternation is not limited to *wh-in-situ* languages. For example, English has at least three varieties of *wh*-questions: *ex-situ* with and without pied-piping, the latter being more expressive (79, 80, from Obenauer 1994); and *wh-in-situ* questions, especially when the *wh* is focused (81, from Bobaljik and Wurmbrand 2015).

(79) (*Well,) **on whose** help did you count?

(80) Well, **whose** help did you count **on**?

(81) A: All the creative people—our R&D, marketing, in-house ad staff—that's all done here in Jersey.
B: But the sneaks are made **where**? China? Malaysia? [From Stabler, *Law and Order*]

More research is definitely needed in order to broaden the empirical coverage of the proposal on Exclusivity in Colloquial French and see whether it can also capture cross-linguistic facts.

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