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Questions in context: the case of French wh-in-situ

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2 French *wh*-in-situ questions

While there is substantial literature on the properties of French *wh*-in-situ questions, many of these properties are not yet well-understood. There is much controversy, with different authors contradicting each other not only on theoretical issues, but also on core aspects of the data. In this chapter, I provide an overview of the claims regarding several important issues in the literature on French *wh*-in-situ questions, focusing on the data. The goal is to summarise and analyse the literature, identifying points of agreement and disagreement. This also provides background to the research described in later chapters.

The structure is as follows. In the first section, I discuss a topic on which some consensus has been reached: the infelicity of *wh*-in-situ in indirect questions (Section 1). On the other issues discussed in the chapter, previous researchers have not yet come to a common point of view. These are long-distance questions (Section 2), strong island effects (Section 3), prosody (Section 4), intervention effects (Section 5) and the so-called ‘extra-strong presupposition’ (Section 6). I conclude that across several topics, a pattern can be observed (Section 7). Some authors claim that *wh*-in-situ questions display a particular phenomenon, other authors (strongly) oppose the claim and yet other authors suggests that the phenomenon is present in only a subset of the data.

1 Indirect questions

The first topic I discuss is *wh*-in-situ in indirect questions. It has long since been pointed out that *wh*-in-situ is excluded in such questions (e.g. Lasnik & Saito 1992; Obenauer 1994). As shown in (1), the *wh*-phrase must be fronted to the beginning of the embedded clause.

(1) a. Pierre a demandé **qui** tu as vu.
 Pierre has asked whom you have seen
 ‘Pierre asked who you saw.’

b. *Pierre a demandé tu as vu **qui**.
 Pierre has asked you have seen whom

[Bošković 1998: 2, ex. 4, bold face added]

There is nevertheless discussion regarding this topic, which mainly originates from claims put forward by Boeckx et al. (2001). These authors state that *wh*-in-situ is felicitous in indirect questions, as long as the sentence contains an overt complementizer. This is not the case in (1b), which they state is the cause of the ungrammaticality. According to them, the sentences in (2) and (3), which contain an overt complementizer, are felicitous. (Note that (3) is intended to be an indirect question rather than a long-distance question.)

(2) Pierre a demandé **si** tu as vu **qui**.
 Peter has asked whether you have seen who
 ‘Pierre asked who you saw.’

(3) Pierre a oublié **que** Marie aime **qui**.
 Pierre has forgotten that Marie loves who
 ‘Pierre forgot who Marie loves.’

[Boeckx et al. 2001: 60, ex. 10 and 12, bold face added]

Other authors deny the acceptability of these examples (Adli 2006; Cheng & Rooryck 2000; Lasnik & Saito 1992; Munaro et al. 2001; Obenauer 1994). They maintain that *wh*-in-situ is unacceptable in indirect questions, even with an overt complementizer. The fact that Boeckx et al.’s judgments are different from the other data presented in the literature may well be due to dialectal variation. A footnote in their paper mentions that they describe *wh*-in-situ “as it is used in some varieties of Belgian French” (fn 2, p. 59). In line with this idea, Mathieu (2004: 4) mentions

that *wh*-in-situ may be acceptable in indirect questions “in some non-standard forms of the language”.

The view that *wh*-in-situ is infelicitous in indirect questions is so widespread, with Boeckx et al.’s Belgian data forming an exception, that I regard the infelicity of *wh*-in-situ in indirect questions as an established property of French *wh*-in-situ questions. The results of an unpublished rating study by Tual (2017a) are in line with this view. Tual asked ninety native speakers from France and Switzerland to judge how natural they found several types of *wh*-questions on a 7-point Likert scale, ranging from -3 to +3. On this scale, the median rating of indirect questions with *wh*-in-situ was -2, compared to +2.5 for indirect questions with *wh*-fronting. (I don’t know the average rating, nor do I have information about the use of complementizers in this study.) This study is further discussed in Section 2, where I examine long-distance questions; see footnotes 5 and 6 for details about the experimental paradigm.

It is not yet understood why *wh*-in-situ is excluded in indirect questions. According to a proposal by Shlonsky (2012), the problem relates to selection. Shlonsky suggests that the unacceptability of *wh*-in-situ is due to the fact that the interrogative C head is selected, e.g. by the matrix clause predicate *demander* ‘ask’ in (1b). However, Déprez (2018) shows that *wh*-in-situ is also unacceptable if the indirect question is not selected. In (4b), the indirect question is right-dislocated and the interrogative C head is not selected by the matrix verb. As *wh*-in-situ is still unacceptable in this sentence, the problem originates elsewhere.

- (4) a. Je veux le savoir maintenant, où tu vas (pas demain)
 I want it know now where you go (not tomorrow)
- b. *Je veux le savoir maintenant, tu vas où (pas demain)
 I want it know now you go where (not tomorrow)
 ‘I want to know it know, where you are going (not tomorrow).’

[Déprez 2018: sl.7, ex. 2, bold face added]

In sum, it is a point of (relative) agreement that *wh*-in-situ is infelicitous in indirect questions. This feature of French *wh*-in-situ

questions remains as yet unexplained. Indirect questions are further discussed in Chapter 6 of the dissertation.

2 Long-distance questions

The literature regarding the other issues discussed in this chapter does not yet converge on a common view. To begin with, I examine *wh*-in-situ in long-distance questions.

There have been many reports in the literature suggesting that *wh*-in-situ is excluded in long-distance questions (Boeckx 1999; Boeckx et al. 2001; Bošković 1998; 2000; Chang 1997; Cheng & Rooryck 2000; Mathieu 1999; 2002; Munaro et al. 2001; Rowlett 2007). However, equally many authors regard *wh*-in-situ in long-distance questions as perfectly acceptable, even as a very natural way of asking such questions (Adli 2004; 2006; Baunaz 2011; Beyssade 2006; Boucher 2010b; Coveney 1996; Jakubowicz & Strik 2008; Kaiser & Quaglia 2015; Obenauer 1994; Oiry 2011; Poletto & Pollock 2015; Rizzi 1996; Sabel 2006; Shlonsky 2012; Starke 2001; Zimmermann & Kaiser 2019). The sentences in (5) and (6), which have received contradictory judgments, illustrate the disagreement.

- (5) (*) Jean et Pierre croient que Marie a vu qui ?
 Jean and Pierre believe that Marie has seen who
 'Who do Jean and Pierre believe that Marie saw?'

[* Bošković 1998: 4, ex. 6a; ✓ Boucher 2010: 124, ex. 91']

- (6) (*) Marie pense que Jean a acheté quoi ?
 Marie thinks that Jean has bought what
 'What does Marie think that Jean bought?'

[* Cheng & Rooryck 2000: 14, ex. 20; ✓ Adli 2006: 175, ex. 4]

Several factors have been suggested to influence the acceptability of *wh*-in-situ in long-distance questions. These factors can clearly not account for all the data, such as the contradictory judgments in (5) and (6). Still, I summarise them briefly, to demonstrate that the data are unclear.

First, a *wh*-phrase that is a subject is claimed to be less felicitous in-situ than a non-subject *wh*-phrase (Jakubowicz & Strik 2008; Obenauer 1994; Shlonsky 2012).⁴ Second, it has been suggested that *wh*-in-situ in long-distance questions is felicitous if the embedded clause is infinitival, but not otherwise (Boeckx 1999; Bošković 1998; Chang 1997; Mathieu 1999). Third, Mathieu (1999; 2002) states that long-distance *wh*-in-situ is felicitous if the embedded clause has subjunctive mood, a view which is not shared by Chang (1997). Fourth, Boeckx et al. (2001) mention that long-distance *wh*-in-situ is acceptable if the verb is factive, e.g. *regretter* 'to regret' rather than *penser* 'to think'. Finally, Baunaz (2005) claims that long-distance *wh*-in-situ becomes acceptable when the *wh*-phrase has a 'specific' interpretation and a particular intonation.

There have been two experimental studies investigating long-distance *wh*-in-situ, of which only the first has been published. This is an elicited production experiment by Oiry (2011), which investigated the production rates of different types of *wh*-questions including long-distance questions with *wh*-in-situ or *wh*-fronting. While the study mainly focused on children's production rates, it contained eighteen adult control subjects. The adults were "asked to write their answers as they would *say* them" (Oiry 2011: 15). They did produce some long-distance *wh*-in-situ questions, but not many. To be precise, the long-distance *wh*-in-situ questions comprised 4.75% of the elicitations in one type of context and 8.5% of the elicitations in another type of context. The number of long-distance *wh*-fronted questions in the same contexts was 21.5% and 40.5% respectively.

The second, as yet unpublished experimental study specifically targeted adult speakers (see also Section 1 on indirect questions). In an acceptability judgment experiment, Tual (2017a) compared several types of *wh*-questions, including long-distance questions with either *wh*-in-situ (7a) or *wh*-fronting (7b). (The other sentence types were indirect and short distance (i.e. simplex) questions, both with either *wh*-in-situ or *wh*-fronting.) The sentences were presented visually in a written context.

⁴ According to Mathieu (2004), this depends on the thematic position of the subject in question.

(7) In a big company, the employees have been granted a pay raise. This is due to the fact that Florence called some members of the management. Louis is the Director of Human Resources of the company. He met the vice-presidents of the company while they were talking about Florence. Later, Louis meets his friend Bernard. They talk about company-related issues. Bernard wants to know what happened, and he asks Louis:

- a. Elles t' ont confié que Florence a téléphoné à qui?
they(F) you have confided that Florence has telephoned to who
- b. A qui elles t' ont confié que Florence a téléphoné?
to who they(F) you have confided that Florence has telephoned
'Whom did they confide in you that Florence called?'

[adapted from Tual 2017a: sl. 15]

Issues like the subject-object asymmetry, tense, mood, factivity and specificity were not explicitly targeted in this study, but I have no information about Tual's experimental items in these respects, nor about the exact properties of the contexts that were used. Ninety native speakers from France and Switzerland were asked to judge how natural they found the stimuli on a 7-point Likert scale ranging from -3 to +3. The median rating on this scale (the average is not reported) was '1' for long-distance questions with *wh*-in-situ and '0' for both long-distance questions with *wh*-fronting and short-distance questions with *wh*-in-situ. The study was not set up to allow for direct statistical comparisons between these values.⁵ However, the results show that long-distance

⁵ Tual converted the raw scores ranging from -3 to +3 into z-scores before running a multilevel regression analysis with normalised scores as the dependent variable. The independent factors were 'sentence type' (long-distance, short distance or indirect question), '*wh*-position' (in-situ or fronted), 'age' and 'country of origin'.

questions with *wh*-in-situ were certainly not rated lower than those with *wh*-fronting.⁶

The experimental studies of Oiry (2011) and particularly Tual (2017a) provide evidence that long-distance *wh*-in-situ questions can be acceptable. Yet, it is not clear why other studies presented different data. There may be an effect of age, as the participants in Tual's study were of mean age 28.5 (yet Tual found no effect of age within this group). Although there was no effect of country of origin in Tual's study, there could still be regional differences. It is also possible that factors related to the sentences themselves are of influence, such as tense or mood. Starke (2001: 52) suggests that the more restrictive judgments correspond to written (i.e. prescriptive) rather than spoken, or informal, French, but this is not confirmed by Tual's study. I conclude that while much remains unclear, certain speakers accept *wh*-in-situ in long-distance questions. I return to long-distance questions in Chapter 6. While I will not discuss the influence of all the different factors mentioned above, I report the results of a rating study that tested the acceptability of *wh*-in-situ in long-distance questions with an object-*wh*-phrase, indicative mood and finite tense.

⁶ None of the independent factors produced any significant main effects. There were two significant interactions between 'sentence type' and '*wh*-position', of which the first concerns long-distance questions and the second concerns indirect questions. First, *wh*-in-situ was rated slightly higher than *wh*-fronting in long-distance questions, while *wh*-fronting was rated slightly higher in short distance questions. The effect size of this interaction was small. Second (and easier to interpret), *wh*-fronting was judged much more natural than *wh*-in-situ in indirect questions, while the difference between *wh*-fronting and *wh*-in-situ in long-distance questions was only small.

3 Strong islands

Another point of disagreement in the literature concerns whether or not an in-situ *wh*-phrase can escape a strong island. (For strong islands, see Ross (1967), and for more recent discussion, Szabolcsi (2006).)

One might expect a sentence with an in-situ *wh*-phrase inside a strong island to be unacceptable. According to some authors, that is indeed the case (Adli 2006; Cheng & Rooryck 2000; Mathieu 2002). I provide an example with an adjunct island in (8) and one with a complex DP island in (9). Square brackets represent an island in this section.

(8) *Il était contrarié [pour avoir dit quoi] ?

he was upset for have said what

Intended: 'Which x is such that he was upset for having said x?'

[Mathieu 2002: 64, ex. 50]

(9) *Jean aime [le livre que Balzac a écrit où] ?

Jean likes the book that Balzac has written where

Intended: 'Which place x is such that Jean likes the book that Balzac wrote in x?'

[Adli 2006 : 188, ex. 30]

However, other authors accept questions in which an in-situ *wh*-phrase is located inside a strong island (Chang 1997; Obenauer 1994; Shlonsky 2012; Sportiche 1981; Starke 2001). Again, I provide examples with an adjunct island (10) and a complex DP island (11).

(10) Il est parti [après avoir bu quoi] ?

he is left after have drunk what

Intended: 'Which x is such that he left after having drunk x?'

[Chang 1997: 56, ex. 22b]

- (11) Tu crois qu' ils vont rembourser
 you believe that they will reimburse
 [ceux qui ont voyagé comment]?
 those who have travelled how
 Intended: 'Which manner *x* is such that you believe that they will
 reimburse those who have travelled in manner *x*?'

[Starke 2001: 22, ex. 51d]

It is not clear why some authors accept *wh*-in-situ inside strong islands and others do not.

There are some additional complexities to the data with respect to coordinate structure islands, subject islands and sentences with two islands. First, regarding coordinate structure islands, Starke (2001) mentions that sentences in which the *wh*-phrase is in the second conjunct are felicitous, while sentences in which the *wh*-phrase is in the first conjunct are not. Second, Obenauer (1994) generally accepts *wh*-in-situ questions with strong islands, yet he considers sentences with subject islands infelicitous (although they improve with a D-linked *wh*-phrase). Third, Obenauer also does not accept *wh*-in-situ questions with two islands embedded in each other, as in (12).

- (12) *Vous connaissez [_{NP} des gens qui ont [_{NP} une maison
 you know INDF.ART.PL people who have a house
 où héberger combien de personnes]]?
 where lodge how.many of persons
 Intended: 'Which number of persons *x* is such that you know people
 who have a house that accommodates *x* number of persons?'

[Obenauer 1994: 296-297, ex. 30b, glosses added]

The felicity of *wh*-in-situ inside a strong island is also further investigated in Chapter 6, where I test the acceptability of *wh*-in-situ questions with an argument *wh*-phrase inside an adjunct island.

4 Prosody

I now turn to two issues concerning the prosody of *wh*-in-situ questions in French. The first is the occurrence of a large sentence-final rise (Section 4.1), while the second concerns certain constraints or speaker strategies that relate to prosodic phrasing (Section 4.2).

4.1 Sentence-final rise

Much of the debate surrounding the prosody of French *wh*-in-situ questions has centred on the question of whether they display a large sentence-final rise. The main significance of this claim stems from a theoretical paper by Cheng and Rooryck (2000), who propose that *wh*-in-situ questions are licensed by their rising intonation. Cheng & Rooryck attempt to account for the occurrence of *wh*-in-situ in French, which as I discussed also has the *wh*-fronting option. They suggest that questions in French can be licensed in two ways: by movement of the *wh*-phrase or by a rising intonation. *Wh*-in-situ questions (as well as yes/no questions) are licensed by the latter.

Contradicting Cheng & Rooryck, Mathieu (2002) states that French *wh*-in-situ questions do not display a sentence-final rise. He claims that these questions standardly end in a fall, which has also been suggested by Di Cristo (1998) and Starke (2001) (cf. Mathieu 2016).

A third view is advocated by Adli (2004; 2006), who maintains that a large sentence-final rise is possible, but optional rather than mandatory. Adli (2004) re-investigates the data collected in a series of studies by Wunderli (1978; 1982; 1983) and Wunderli and Braselmann (1980). These studies describe different parts of a corpus of French *wh*-in-situ questions, classifying them as displaying one of three intonation contours. The first contour optionally ends in a rise, which can be larger or smaller, the second contour does not end in a rise and only the third standardly displays a large final rise. Adli (2004) calculates the percentages of occurrence of these three contours in the total corpus, which are 70.7%, 19.7% and 9.5% respectively. Adli (2006), using a non-standard

experimental protocol⁷, maintains that only part of the French *wh*-in-situ questions exhibits a large sentence-final rise (cf. Di Cristo 2016).

Déprez et al. (2013) set out to test Cheng & Rooryck's (2000) claim experimentally. They recorded *wh*-in-situ questions, as well as a range of other utterance types for comparison (namely declaratives, yes-no questions with and without *est-ce que*, echo questions, and *wh*-fronted questions with either *est-ce que* or subject-auxiliary inversion). These were uttered by twelve native speakers of French. The *wh*-phrase did not occur sentence-finally in these sentences, in order to isolate the prosody associated with the end of the utterance from the prosody associated with the *wh*-word. A disadvantage of the study is that the test items displayed much variability: the five test items per condition contained *wh*-phrases as diverse as *où* 'where' and *quel élément* 'which element'. The authors first coded the sound files for the perceived presence or absence of a final rise. Then the acoustic properties of the final part of the utterances were analysed. To this end, the F_0 (pitch) of the different utterances was averaged. The results of both analyses indicate that nine of the twelve participants generally uttered the questions with a small final rise (smaller than in yes/no questions). The other three participants did not assign the utterances a rising contour. A further observation was a negative correlation between the sentence-final rise and the pitch measured on the *wh*-word. A large sentence-final rise tended to be present in the absence of a prominent accent on the *wh*-word, and vice versa. The authors present these results as "nuanced support" (p.15) for Cheng & Rooryck's proposal. Data collected by Delais-Roussarie et al. (2015) with the purpose of developing a French ToBI system support this interpretation.⁸ The *wh*-in-situ questions in Delais-Roussarie et al.'s

⁷ Participants were asked to verbally describe the intonation contour of a *wh*-in-situ question they uttered; see also Déprez et al. (2013) for a criticism of this methodology.

⁸ The data were collected at nine locations, where the relevant number of speakers ranged from one to five. Each speaker reacted orally to 29 situations presented by the interviewer. I don't have information about the number or exact form of the *wh*-in-situ questions in the corpus.

corpus, recorded at different locations across France, Belgium and Switzerland, standardly exhibited a rising sentence-final contour.

Yet Tual (2017b), investigating the same issue, could not replicate Déprez et al.'s results. He conducted an analysis of utterances from a French spoken language corpus, ESLO2 (interview section) (Eshkol-Taravella et al. 2010). His study included four types of utterances: *wh*-in-situ questions (N=201), declaratives (N=486), *wh*-fronted questions without *est-ce que* (N=163) and yes/no questions without *est-ce que* (N=362).⁹ In order to determine the presence of a sentence-final rise, Tual measured the mean F₀ of the final accented vowel of an utterance and the mean F₀ of the penultimate vowel, and calculated the difference. In light of the negative correlation observed by Déprez et al., Tual also measured the highest F₀ value in the *wh*-region, for those *wh*-in-situ questions in which the *wh*-phrase did not occur sentence-finally (N=67 out of N=201). The results showed no statistical difference between the sentence-final contours of *wh*-in-situ and *wh*-fronted questions. There was also no difference between declaratives and *wh*-questions in this respect.¹⁰ Only yes/no questions exhibited a clear sentence-final rise that was larger than in the other three utterance types. The negative correlation between the final rise and the accent on the *wh*-word was also not replicated by Tual.

The results of two corpus studies by Reinhardt (2019) may explain these contradictory findings. These studies examined the interrogatives of thirty episodes of reality TV shows (N=210 *wh*-in-situ; N=366 *wh*-fronted) and the questions containing the *wh*-word *où* 'where' in the audio book-version of ten detective novels (N=68 *wh*-in-situ; N=168 *wh*-fronted) respectively. One of the properties for which the sentences were annotated was their final intonation pattern. Both studies showed that a sentence-final rise is more frequent in *wh*-in-situ than in *wh*-fronted questions. However, both these types of questions occur with a rising as

⁹ I don't have any further information about the properties of the utterances analysed by Tual (2017b).

¹⁰ Tual (p.c.) points out that the speakers of the declarative sentences may have used a slightly rising final intonation to signal that their speech turn was not yet complete (continuation rise).

well as a falling sentence-final contour. So there is a tendency for *wh*-in-situ questions to display a sentence-final rise more frequently, but this is by no means a strict constraint. These results were not affected by whether or not the in-situ *wh*-phrase occurred sentence-finally.

Reinhardt's results seem to reconcile the contradictory findings of Déprez et al. (2013), who observed a final rise in most *wh*-in-situ questions, and Tual (2017b), who found no statistical difference between *wh*-in-situ and *wh*-fronted questions. What remains is that certain studies claim that French *wh*-in-situ questions exhibit a large sentence-final rise, other studies oppose this claim and yet other studies suggest that a final rise is present in part of the cases. Chapter 4 of the dissertation reports on an experiment that investigates the prosodic properties of French *wh*-in-situ questions. I will argue that the results of this experiment provide further insight into the presence versus absence of the sentence-final rise.

4.2 Prosodic constraints or strategy

A second area of prosodic investigation, which has recently started to attract attention, concerns certain prosodic constraints. Mathieu (2016) and Hamlaoui (2011) both propose such a constraint. They both assume that French *wh*-in-situ questions have a narrow focus on the *wh*-phrase so that the in-situ *wh*-phrase is the focus of the sentence. They also assume that a focus should be aligned with the right edge of a prosodic boundary in French. Their proposals appear to be in opposition, but upon closer inspection, are not.

According to Mathieu (2016), certain *wh*-in-situ questions tend to require some material to the right of the *wh*-phrase, so that the *wh*-phrase is not situated at the right edge of the utterance (see also Adli 2015). Mathieu claims that in questions containing both an adjunct *wh*-phrase and a (quasi-)argument of the verb, it is preferable to reverse the constituent order, especially if the sentence contains many prosodic phrases or if these phrases are long. This is illustrated in (13a), in which the *wh*-phrase does not occur sentence-finally. According to Mathieu, in contrast to (13b), which displays the default word order, (13a) is preferred. I add the declarative sentence in (13c) for comparison.

- (13) a. Il est venu comment au rendez-vous ?
 he is come how to.the appointment
 ‘How did he come to the appointment?’
- b. ?? Il est venu au rendez-vous comment ?
 he is come to.the appointment how
 ‘How did he come to the appointment?’
- c. Il est venu au rendez-vous en voiture.
 he is come to.the appointment in car
 ‘He drove to the appointment.’

[Mathieu 2016: 16-17, ex. 36]

The reason for this requirement, according to Mathieu, is that an in-situ *wh*-phrase prefers a clear demarcation from its surrounding material, so that the prosodic boundary at the end of the *wh*-phrase (iP) clearly sets the focus apart from the rest of the sentence.

This requirement for an in-situ *wh*-phrase not to be situated at the right edge of an utterance at first sight contrast with a proposal by Hamlaoui (2011), according to which an in-situ *wh*-phrase should be situated at the right edge of a clause. Hamlaoui suggests that an in-situ *wh*-phrase is preferably placed clause-finally in order to be aligned with the right edge of a prosodic boundary (IP). To this end, speakers may employ clitic right-dislocation, as in (14).

- (14) On y_i va quand, à Édimbourg_i ?
 we there go when to Edinburgh
 ‘When are we going to Edinburgh?’

[Hamlaoui 2011: 31, subscripts added]

As *à Edimbourg* ‘to Edinburgh’ is right-dislocated in this example, the *wh*-phrase occurs at the end of the clause. According to Hamlaoui, only material that cannot be right-dislocated can stand between the *wh*-phrase and the right clausal edge.

Although Mathieu suggests that an in-situ *wh*-phrase is preferably not situated at the right edge of an utterance, and Hamlaoui proposes that it is

best placed clause-finally, the sentences in (13a) and (14) are very similar (cf. Adli 2015). In both cases, a constituent is moved to the right of the *wh*-phrase. (While Hamlaoui mentions that *à Édimbourg* ‘to Edinburgh’ is right-dislocated, Mathieu does not say anything about the place to which *au rendez-vous* ‘to the appointment’ is shifted.) Possibly, (13a) and (14) are the result of the same strategy, which speakers use to avoid a dispreferred prosodic pattern, cf. (13b). Viewed like this, the distance to the right edge of the clause may not be the relevant factor. In order to investigate why a sentence like (13b) is dispreferred, it may be fruitful to investigate the prosodic phrasing of the sentence as a whole, including the (im)possibility to phrase the *wh*-phrase together with the preceding (e.g. Gryllia et al. (2016)) or following material. The distance of the *wh*-phrase to the left edge of the clause and the relative length of a constituent like *à Édimbourg* to the length of a *wh*-phrase like *quand* ‘when’ may also play a role. Works in progress that are likely to shed more light on the reason for (13a) and (14) are Tual (in preparation) and Kaiser (in preparation).

Mathieu (2016) also suggests that *wh*-in-situ questions are more acceptable with a pronominal subject than with a full (heavy) DP, which he sees as also due to prosodic constraints. According to Mathieu (2016: 17), (15a) is ‘much more natural’ than (15b), for which the *wh*-fronted question in (15c) is a preferred alternative.

- (15) a. Ils ont cassé quoi ?
 they have broken what
 ‘What did they break?’
- b. Jean-François et Marie-Catherine ont cassé quoi ?
 Jean-François and Marie-Catherine have broken what
 ‘What did Jean-François and Marie-Catherine break?’
- c. Qu’ est-ce que Jean-François et Marie-Catherine ont cassé ?
 what is-it that Jean-François and Marie-Catherine have broken
 ‘What did Jean-François and Marie-Catherine break?’

[Mathieu 2016: 18, ex. 40]

The data in Reinhardt (2019) confirm that pronominal subjects are preferred over full DPs. While *wh*-in-situ questions with full DP subjects do occur in spoken language, *wh*-in-situ questions with a pronominal subject are more common. This cannot be explained by the fact that pronominal subjects are more common than full DPs in *wh*-questions in general (Coveney 1996; Reinhardt 2019). Again, this may reflect a speaker strategy to improve prosodic phrasing. The question is what patterns of prosodic phrasing are pursued or avoided by this strategy. Work in progress on this issue can be found in Wallner (in preparation).

I will not investigate these issues in this dissertation, but I briefly mention some observations in the literature that could be relevant for future research. *Wh*-phrases that occur in-situ contain on average more syllables than fronted *wh*-phrases, while the opposite holds for the number of syllables in the rest of the clause (Coveney 1996; Reinhardt 2019). Also, *wh*-in-situ, as opposed to *wh*-fronting, is more frequent in shorter utterances (three syllables or less) than in longer utterances. It may also be relevant that the two movement strategies mentioned in (13a) and (14) occur with a very low frequency (Adli 2015).

The issues discussed in this section may be relevant for other areas in which the data are unclear as well, as they may also affect judgments of French *wh*-in-situ questions that are collected to investigate other issues.

5 Intervention effects

I now turn to the issue of intervention effects. I first introduce the phenomenon in some detail as it plays a prominent role in the dissertation, before discussing controversies surrounding this topic.

The term ‘intervention effects’ refers to the phenomenon that certain expressions, such as quantificational expressions or negation (‘interveners’), may not precede an in-situ *wh*-phrase (Beck 1996). The phenomenon was first described by Obenauer (1976) and became more widely known following discussion by Beck (1996). Intervention effects have been attested in many languages, for instance in multiple questions in German, as illustrated by (16). While (16a) is acceptable, the sentence in

(16b) is not, as *niemand* ‘nobody’ precedes the in-situ *wh*-phrase *wo* ‘where’.

- (16) a. Wen hat Luise wo gesehen?
 whom has Luise where seen
 ‘Where did Luise see whom?’
- b. *Wen hat *niemand* wo gesehen?
 whom has nobody where seen
 ‘Where did nobody see whom?’

[Beck 1996: 4 and 1, ex. 5b and 1b]

The data regarding intervention effects differ greatly between languages and are subject to controversy (Bayer & Cheng 2017). For instance, while interveners often include negation (*not*), quantifiers (*a lot*, *often*) and focusing elements (*only*), it is not clear exactly what property characterizes all interveners. Different types of proposals have attempted to account for intervention effects, based on syntactic (e.g. Beck 1996; Guerzoni 2006; Pesetsky 2000), semantic (e.g. Beck 2006; Haida 2007; Li & Law 2016; Mayr 2014), prosodic (Hamlaoui 2010) or information structural (Tomioka 2007; Eilam 2011) properties of the configuration.¹¹

Intervention effects have also been observed in French *wh*-in-situ questions (Bošković 1998; 2000; Chang 1997; Cheng & Rooryck 2000; Hamlaoui 2010; Mathieu 1999). As the relevant configuration is one in which the intervener c-commands the in-situ *wh*-phrase, the presence of intervention effects leads to a contrast in acceptability between *wh*-in-situ and *wh*-fronted questions, as shown in (17).

¹¹ Proposals regarding French can be found for instance in Obenauer (1994), Bošković (2000), Starke (2001), Mathieu (1999) and Baumaz (2011).

- (17) a. **Seulement Jean arrive à faire quoi?*
 only Jean manages to do what
- b. *Qu_i' est-ce que seulement Jean arrive à faire t_i?*
 what is-it that only Jean manages to do
 'What does only Jean manage to do?'

[Mathieu 1999 : 447-448, ex. 12, typographic emphasis added]

However, some authors state that French *wh*-in-situ questions do not display intervention effects (Adli 2004; 2006; Beyssade 2006; Boucher 2010b; Poletto & Pollock 2015). They claim that while sentences with an intervener may appear odd, they become natural once they are presented in an appropriate context. This is illustrated by speaker B's utterance in (18), which is presented as acceptable due to the context.¹²

- (18) Speaker A has just complained that her children are rather picky about what they eat.

A: Mon fils ne mange pas de poisson.
 my son NE eats not of fish
 'My son doesn't eat fish.'

B: Et ta fille, elle ne mange *pas* quoi ?
 and your daughter she NE eats not what
 'What about your daughter? What doesn't she eat?'

[Engdahl 2006: 100, ex. 23]

A third position suggests that French *wh*-in-situ questions exhibit intervention effects in certain cases, depending on several interrelated factors (Baunaz 2005; 2011; 2016; Starke 2001). These are the type of *wh*-phrase, the type of intervener, the prosody associated with the *wh*-phrase and, again, the context in which the question is uttered.

¹² Example (18) is not in fact judged to be acceptable by all speakers. I will return to this issue in Chapter 5.

In addition to whether intervention effects in French *wh*-in-situ questions exist, a second point of controversy concerns the elements that constitute the class of interveners. For instance, while Engdahl (2006: 100) considers *wh*-in-situ questions with negation acceptable “if the context makes the negative form appropriate” (as in (18)), she considers focus sensitive operators like *seulement* ‘only’ to be interveners. Beyssade (2006: 182, ft 186) considers *wh*-in-situ questions with either negation (*pas* ‘not’) or a quantifier (*chaque N* ‘each N’, *tous les N* ‘all the N’) acceptable, but does not accept questions containing *personne* ‘nobody’, which is both negative and a quantifier. According to Mathieu (2002), negation, focus and many quantifiers constitute interveners, but this is not the case for frequency adverbs such as *souvent* ‘often’. Yet, Mathieu (1999) regards *souvent* ‘often’ as an intervener. What complicates matters is that authors tend to investigate only a subset of the interveners mentioned in the literature.

Summarising this section, there is much controversy regarding the presence of intervention effects in French *wh*-in-situ questions. While many authors have observed intervention effects in such questions, other authors maintain that they do not exhibit intervention effects, as long as the sentence is uttered in an appropriate context. Yet other authors claim that intervention effects occur under certain conditions (again relating to context), i.e. only in part of the relevant data. It is also not clear which elements would constitute the class of interveners. In Chapter 5, I show that upon closer inspection, the opposition between these authors is only apparent. French *wh*-in-situ questions display intervention effects, yet a particular type of context can make these effects disappear (cf. Baunaz 2011; Starke 2001). My proposal concerns what it is about the context that can make a French *wh*-in-situ question with an intervener acceptable.

6 Extra-strong presupposition

The final topic of this chapter is referred to in the literature as the ‘extra-strong presupposition’. It is usually attributed to Chang (1997), although she cites Coveney (1989).

The examples in (19) and (20) serve to introduce the extra-strong presupposition. They display a *wh*-fronted and a *wh*-in-situ question, each accompanied by an answer.

(19) Question: Qu’ est-ce que Marie a acheté ?	Answer: Rien.
what is-it that Marie has bought	nothing
‘What did Marie buy?’	‘Nothing.’

(20) Question: Marie a acheté quoi ?	Answer: ??Rien.
Marie has bought what	nothing
‘What is it that Marie bought?’	‘Nothing.’

[adapted from Chang 1997: 42, ex. 37 and 40]

The *wh*-fronted question in (19) is a neutral question. Like other *wh*-questions, it involves an existential implicature: the speaker expects there to be an answer to the question.¹³ The question in (19) can potentially receive a negative answer like *rien* ‘nothing’. In contrast, the *wh*-in-situ question in (20) has been claimed to be felicitous only if the speaker already assumes that Marie bought something. It is ‘strongly presupposed’ that there exists a value to fill the *wh*-phrase. The speaker merely requests more detail about the purchase, i.e. what it is that Marie bought. Therefore, a negative reply like *rien* ‘nothing’ is odd.

What is said to be presupposed is the whole event of Marie buying something, which is different from Pesetsky’s (1987) D-linking. This is illustrated with (21).

¹³ As explained in Chapter 1, I use the term existential implicature for what is traditionally regarded as an existential presupposition.

(21) A: C'est l' anniversaire de Pierre la semaine prochaine.
 it is the birthday of Pierre the week next
 'It's Pierre's birthday next week.'

B: Et tu vas lui acheter quoi?
 and you will for.him buy what
 'And what will you buy for him?'

[Cheng & Rooryck 2000: 24, fn. 3, adapted from Chang 1997]

In this example, speaker A mentions that Pierre's birthday is coming up. This leads speaker B to assume that A will be buying Pierre a present (based on his/her knowledge of the world). Speaker B's *wh*-in-situ question is felicitous because of the presupposition that there exists an entity that will satisfy the open proposition, i.e. a present that will be bought. The context does not involve a presupposed set of presents that is already familiar to the interlocutors, as with D-linking.

The view that French *wh*-in-situ questions involve an extra-strong presupposition and can therefore not receive a negative answer is quite wide-spread in the literature (Boeckx 1999; Boeckx et al. 2001; Boucher 2010b; Cheng & Rooryck 2000; Mathieu 2002: 124-133; Zubizarreta 2003). Yet, this is also true of the opposite view, which is that French *wh*-in-situ questions are not presuppositionally different from *wh*-fronted questions and may also receive a negative reply (Adli 2006; Aoun et al. 1981; Beyssade 2006; Hamlaoui 2011; Mathieu 2004; Oiry 2011; Shlonsky 2012; Starke 2001; Zimmermann & Kaiser 2019).¹⁴

A nice example in support of the latter view is presented by Déprez et al. (2012), displayed in (22).

(22) Imagine that mid-afternoon, you are hanging out with a couple of friends, to whom you would like to extend an impromptu invitation

¹⁴ Mathieu (2004: 57) even suggests that French *wh*-in-situ questions are *not* felicitous when a context (a situation and its participants) has already been established.

for dinner the same night. Casually, in the course of the conversation you ask:

Alors, vous faites quoi ce soir?
 so you(PL) do what this evening
 ‘What are you (guys) doing tonight?’

[Déprez et al. 2012: 145-146, ex. 9a]

In this example, the speaker actually hopes that the answer to the question will be negative, so that the speaker’s friends can come to dinner.

Another piece of data against the idea of a stronger presupposition comes from the verb *foutre*, which literally means ‘fuck’, but is used in an informal register to mean ‘do’ (Starke 2001). In contrast to the neutral verb *faire* ‘do’, *foutre* only takes an object with a non-specific meaning like ‘something’ or ‘nothing’. Still, *foutre* can take an in-situ *wh*-phrase as its object, as in (23). Starke presents this as evidence of the non-presuppositional nature of *wh*-in-situ questions.

(23) T’ as foutu quoi pendant tout ce temps ?
 you have done.INFORMAL what during all this time
 ‘What did you spend all this time doing?’

[Starke 2001: 52, ex. 123b]

In addition to studies that support or oppose the existence of an extra-strong presupposition, there is work suggesting that an extra-strong presupposition is present in part of the *wh*-in-situ questions. Baunaz (2005; 2011; 2016), building on Starke (2001), proposes a typology according to which French has three types of in-situ *wh*-phrases: ‘non-presuppositional’, ‘partitive’ and ‘specific’. In contrast to non-presuppositional *wh*-phrases, partitive and specific ones involve a special existential presupposition. A negative reply to a question with such a *wh*-phrase is odd, because it would go against this presupposition. In particular the description of a specific *wh*-phrase is very similar to the descriptions of the extra-strong presupposition. Namely, a specific *wh*-

phrase presupposes the existence of a particular antecedent for the *wh*-phrase, as exemplified in (24).

(24) During a trial, witnesses and defendants are confronted. One of the defendants has been accused by all the witnesses.

The journalist asks:

Et les témoins ont reconnu qui
and the witnesses have recognized whom

dans le box des accusés ?
in the box of the defendants

‘And whom did the witnesses recognize in the defendants’ box?’

[Baunaz 2016: 137, ex. 17]

Baunaz suggests that the speaker of (24) infers that the interlocutor has a specific defendant who has been accused by the witnesses in mind. The speaker merely asks for the identity of this defendant.

The idea that only part of the *wh*-in-situ questions involve an extra-strong presupposition can be found in other works as well. Coveney (1989), who first introduced the idea of the stronger presupposition, considers it a tendency rather than an absolute constraint (cf. Coveney 1996). Also, in a different framework, Myers (2007) reports a tendency for *wh*-in-situ questions to be associated with higher activated open propositions than *wh*-fronted questions. A high activation on Myers’ scale translates rather well to the concept of a stronger presupposition.

In sum, the extra-strong presupposition has been observed by some authors, its existence has been denied by other authors and a yet other authors suggest that it is present in part of the *wh*-in-situ questions.

It is not altogether clear what the conceptual status of the presupposition is or where it might come from. Some proposals attribute the alleged presuppositional nature of *wh*-in-situ to the feature composition of the *wh*-phrase. For instance, Starke and Baunaz assume that a *wh*-phrase has a complex structure, made up of syntactic nano-features (Baunaz 2005; 2011; 2016; Starke 2001). Whether a *wh*-phrase is

non-presuppositional, partitive or specific is determined by the *wh*-phrase's feature composition (see Chapter 5 for more detail). In a similar vein, Boeckx attributes the stronger presupposition to a definite D feature that is part of the internal structure of an in-situ *wh*-phrase, but not of a *wh*-fronted one (Boeckx 1999; Boeckx et al. 2001). The D feature presupposes the existence of the content of its complement, i.e. the *wh*-phrase. These proposals place the alleged presuppositional nature of *wh*-in-situ, which at first sight seems like a semantico-pragmatic phenomenon, in the morphology (nano-syntax) of the *wh*-phrase.

Some other works relate the alleged stronger presupposition to the focus structure of the sentence. Mathieu (2002: 124-133) describes the stronger presupposition in terms of background, in contrast to focus. He analyses French *wh*-in-situ questions as involving a null *wh*-operator in combination with an indefinite expression that remains in-situ. While the null operator is focused and 'new information', the rest of the sentence including the indefinite expression is presupposed and old information. This is different in a *wh*-fronted question, where both the *wh*-operator and the indefinite expression (i.e. the whole *wh*-phrase) are focused. Chang's (1997) original discussion of the extra-strong-presupposition also brings to mind the notion of background to a focus. She mentions that "all information other than the questioned element is *taken for granted*" and that "the information expressed by everything, except the *wh*-word is already a salient part of the previous discourse" (p. 44).

Yet, according to Hamlaoui (2011), the extra-strong presupposition should be distinguished from the focus structure of the sentence. Hamlaoui states that there is a difference in focus structure between *wh*-in-situ and *wh*-fronted questions, but that *wh*-in-situ questions do not involve a stronger presupposition. She emphasises that the extra-strong presupposition and the term background should be kept separate.

I will return to the topic of the extra-strong-presupposition in Chapter 6. The proposal presented there explains what causes (the appearance) of the presupposition and why different authors have come to different conclusions regarding its presence.

7 Conclusions

In this chapter, I summarised and analysed the literature regarding several important issues relating to French *wh*-in-situ questions, identifying points of agreement and disagreement. This also provided background to the research reported in later chapters.

With respect to *wh*-in-situ in indirect questions, the literature has mostly converged on a common point of view, which is that such questions are unacceptable. Regarding the other issues discussed in the chapter, no consensus has been reached. There is evidence to suggest that long-distance *wh*-in-situ questions can be acceptable for certain speakers, but the data remain unclear. There is even less agreement concerning *wh*-in-situ questions in which the *wh*-phrase is embedded in a strong island. A part of the studies in the literature accept such sentences, while other studies do not. Certain prosodic requirements, which have only recently become a focus of attention, at first sight appear contradictory. I suggested that they are in fact not contradictory and seem to reflect the same speaker strategy to avoid a particular prosodic pattern, which may be identified by future research.

Across several issues discussed in the chapter, a recurring pattern emerged. Some authors observe a particular property, other authors deny its existence and yet other authors observe its presence in a subset of the data. This concerned the presence of a large sentence-final rise, the occurrence of intervention effects and the presence of an extra-strong presupposition. Given this pattern, there may be some genuine variability in the data that is caused by underlying factors. With respect to intervention effects, I mentioned that the preceding context may be of influence. I will pursue this idea in later chapters.

While I will not address all the specifics that were examined in this chapter, the issues that were discussed here will all be taken up again in Chapters 4 to 6 (with the exception of prosodic constraints or strategies). In particular, prosody, intervention effects and the extra-strong-presupposition will play an important role. In Chapter 3, I first provide further background on the relevant notions related to context.

