Questions in context: the case of French wh-in-situ
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Cover illustration: wallpaper inspired on 'Almond Blossom' by Vincent van Gogh.

Wallpaper: BN International, 220020 Van Gogh, Huizen 2019. 'Almond Blossom', Vincent van Gogh (1853-1890), Saint-Rémy-de-Provence, February 1890. Van Gogh Museum, Amsterdam (Vincent van Gogh Foundation).

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

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To Stefan, my parents and Tamar

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Glossing conventions

Abbreviations in glosses

ART	article
CL	classifier
DE	modification marker *de* (Mandarin)
DES	plural indefinite article (French)
F	feminine
INDF	indefinite
NE	clitic *ne* combining with negation (French)
PERF	perfective
PL	plural
REFL	reflexive

Interveners are marked by slanted text in all examples, also if the example was taken from another publication and the intervener was originally not marked like this.

CAPITALS in English and German examples represent the main pitch accent.

I added a translation in all cases where the source of an example did not provide one.

1 Introduction

This dissertation investigates the properties of a particular type of question, namely *wh*-in-situ questions in French. While this type of question is interesting for several reasons, its properties are still the subject of much debate. I examine their properties from two perspectives, both of which relate to the context in which a question is uttered. The first is the information structure of the sentence, specifically focus and givenness. The second is the distinction between regular information seeking questions and echo questions. The investigation of French *wh*-in-situ questions will also provide more general insights into the relation between *wh*-questions and aspects of the context in which they are uttered.

In this chapter, I begin by introducing the object of study: French *wh*-in-situ questions (Section 1). I then lay out the approach that is taken in the current work (Section 2). The chapter ends with an outline of the dissertation (Section 3).

1 French *wh*-in-situ questions

French has multiple ways in which a *wh*-question may be formed, of which the main ones are displayed in Table 1. Differences in pragmatic usage aside, all questions in the table may be translated as 'Who do you see?'.

Table 1. The main types of French *wh*-questions, examples all translatable as
'Who do you see?' [adapted from Rowlett 2007: 152, ex. 209]

TYPE	EXAMPLE
wh-in-situ	Tu vois qui ?
	you see who
wh-fronting	Qui tu vois ?
	who you see
wh-fronting + *est-ce que*	Qui est-ce que tu vois ?
	who is-it that you see
wh-fronting + inversion	Qui vois-tu ?
	who you-see

It is clear from Table 1 that French has several types of *wh*-fronted
questions, i.e. questions in which the *wh*-phrase is moved to the left edge
of the sentence.[1] The language also has *wh*-in-situ questions, exemplified
in the top row, which are the focus of this dissertation. The *wh*-phrase
appears to be left 'in-situ' in this type of question, i.e. at the same position
as the corresponding element in a declarative, cf. (1).

(1) Tu   vois Pierre.
    you see Pierre
    'You see Pierre.'

Wh-in-situ questions are not part of the prescriptive grammar.
Speakers of French for whom normative considerations weigh heavily
may even feel that they are not part of the standard language. However, it
has been established that these questions are very common in French
(Boucher 2010a; Myers 2007; Quillard 2000). They are more likely to be
used in an informal register, but are not limited to this domain. When it

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[1] For a recent overview of the different possibilities regarding these fronted questions and
analyses of the differences between them, see Reinhardt (2019).

comes to informal spoken language and simplex matrix clauses, *wh*-in-situ is even the most frequently occurring question form (Adli 2015). Indeed, Reinhardt (2019: 381) calls *wh*-in-situ "the default structure for contemporary spoken French".

French *wh*-in-situ questions take an interesting place in the cross-linguistic spectrum. There are two core strategies that the languages of the world employ for forming a *wh*-question: *wh*-movement and *wh*-in-situ. *Wh*-movement is used in languages like English, in which the *wh*-phrase is standardly moved to the left periphery of the sentence, as in (2).

(2) What did John buy ___?

Other languages, like Mandarin Chinese and Japanese, employ the w*h*-in-situ strategy, as exemplified in (3).

(3) hufei mai-le   shenme (ne)
    Hufei buy-PERF what   PRT
    'What did Hufei buy?'

[Cheng & Rooryck 2000: 3, ex. 2]

Although there are more languages with both options, French is unusual in this typology in that it has both the *wh*-fronting and the *wh*-in-situ strategy, cf. Table 1 above (Aoun et al. 1981).[2] It is not yet understood why the language has both options and what may determine a speaker's choice for one or the other. The availability of both options sets *wh*-in-situ questions in French apart from those in typical *wh*-in-situ languages.

The properties of French *wh*-in-situ questions, although they are still debated, also seem to be different from those of questions in true *wh*-in-situ languages. As *wh*-in-situ is the only option in Mandarin Chinese, this strategy is used in all question contexts, including indirect questions (4a).

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[2] Other languages with both options are for instance Ancash Quechua (Cole & Hermon 1994) and Modern Greek (Vlachos 2012).

Yet, many authors have pointed out that *wh*-in-situ is illicit in indirect questions in French (4b) (e.g. Chang 1997; Obenauer 1994).

(4) a. Bótōng xiǎng-zhīdào Húfēi mǎi-le   shénme.
         Botong want-know   Hufei buy-PERF what
         'Botong wants to know what Hufei bought.'

    b. *Je me demande (que) Jean a   acheté quoi.
        I me ask   that Jean has bought what
        Intended: 'I wonder what Jean bought.'

                                    [adapted from Bayer & Cheng 2017: 2-3, ex. 3]

Similarly, languages like Mandarin Chinese do not exhibit strong island effects if the *wh*-phrase is an argument (i.e. not an adverbial) (5a) (Reinhart 1998; Tsai 1994b). Yet it has been claimed that an in-situ *wh*-phrase is infelicitous inside a strong island in French (5b) (e.g. Cheng & Rooryck 2000; Mathieu 2002).

(5) a. hufei xihuan nei-ben shei xie   de shu.
         Hufei like   that-CL who write DE book
         'Who is the person x such that Hufei likes the book that x wrote?'

    b. *Jean aime le   livre que qui a   écrit.
        Jean like   the book that who has written
        Intended: 'Who is the person x such that
                   Jean likes the book that x wrote?'

                                    [Cheng & Rooryck 2000, p.3, ex. 3b and p.4, ex. 4b]

Another question connected to French *wh*-in-situ questions is how they may be distinguished from echo questions. The example in (6) displays an (ordinary) information seeking question, while (7) exemplifies an echo question. In the echo question in (7), part of speaker A's utterance was not clearly audible, which prompts speaker B to ask for a repetition, 'echoing' the previous utterance.

(6) Jean a   invité qui ?
    Jean has invited who
    'Who did Jean invite?'

(7) A: Jean a   invité   #####[noise].
       Jean has invited
       'Jean invited #####[noise].'

    B: Jean a   invité   qui ?
       Jean has invited who
       'Jean invited who? (I did not hear you.)'

As is clear from these examples, the two types of question may be string-identical.

Despite many previous discussions, the properties of French *wh*-in-situ questions are not yet well understood. Some of the areas in which the data are still unclear are prosody, 'intervention effects' and the presence of an 'extra-strong existential presupposition'. I briefly introduce the latter two terms. The term intervention effects refers to the phenomenon that *wh*-in-situ is infelicitous when the *wh*-phrase is preceded by a so-called 'intervener', such as a quantificational expression, focus or negation, like *aucun (étudiant)* 'no (student)' in (8) (Beck 1996; Chang 1997; Mathieu 1997; cf. Obenauer 1976).

(8) **Aucun étudiant* a   lu   quoi ?
     no   student has read what
     Intended: 'What did no student read?'

[Mathieu 2002: 48, ex. 23a]

The extra-strong existential presupposition is a special presupposition that has been claimed to arise from French *wh*-in-situ questions (Chang 1997; Coveney 1989). According to this claim, which is controversial, the speaker of a *wh*-in-situ question like (9) already assumes that there is something that Marie bought. Therefore, an answer like *rien* 'nothing' is perceived as odd, which contrasts with the *wh*-fronted question in (10).

(9) Question: Marie a   acheté quoi ?   Answer: [??]Rien.
              Marie has bought what   nothing
              'What is it that Marie bought?'   'Nothing.'

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

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

The term "extra-strong" presupposition refers to the impression of a stronger presupposition than in other *wh*-questions. Traditionally, it is assumed that *wh*-questions in general exhibit an existential presupposition (e.g. Karttunen & Peters 1976; Katz & Postal 1964). Under this view, a question like *What did Marie buy?*, cf. (10), presupposes the existence of an entity answering the question. In other words, it presupposes that Marie bought something. Yet some authors have argued against the presence of an existential presupposition in regular *wh*-questions (see, among others, Fitzpatrick 2005; Ginzburg 2003; Groenendijk & Stokhof 1984). When asking a *wh*-question, the speaker expects there to be an answer, such as a thing that Marie bought in (10). However, based on several arguments like cancellability, this expectation is analysed by some as an existential implicature rather than a presupposition (Ginzburg 2003; Groenendijk & Stokhof 1984). While a presupposition cannot be cancelled, it is possible to cancel an implicature (Grice 1975). For instance, the *wh*-question in (10) can receive a negative reply (*rien* 'nothing'), which cancels the proposition that Marie bought something. This can be seen as support for the idea that the expectation that Marie bought something in (10) is not a presupposition. Following several studies that are relevant to this dissertation (Baunaz 2016; Büring 2016; Jacobs 1991), I will also refer to the expectation that there is an answer to a *wh*-question like (10) as an existential implicature.

2 The approach of this dissertation

To further our understanding of the properties of French *wh*-in-situ questions, I investigate them from two angles. The first is the information structure of the sentence, i.e. focus and givenness. The second is the distinction between ordinary information seeking questions and echo questions. Both these factors interrelate with the context in which a question is uttered.

Focus and givenness both indicate the relation of a sentence to the preceding context. They are exemplified in (11) and (12), in which the notation []$_G$ indicates that an expression is given, []$_F$ indicates focus, and capital letters represent a pitch accent.

(11) Sinatra's reputation among industry musicians grew swiftly, and
James always supPORted [the singer]$_G$.

[Büring 2016: 18, ex. 1]

In (11), *the singer* is given, due to previous mention of *Sinatra*. This previous mention has made the referent of *Sinatra*, the singer Frank Sinatra, contextually salient. When the expression *the singer* is mentioned later in the sentence, its referent is already salient, as a result of which *the singer* is given (e.g. Büring 2016). Givenness is often associated with deaccentuation (Ladd 1980; Rochemont 1986; Selkirk 1984b).

The focus of a sentence is the only part of the content that does not have to be salient in the preceding context (e.g. Büring 2016; Schwarzschild 1999). When no part of the sentence is salient, different terminology may be used. Sometimes the term 'neutral context' is employed (e.g. Cheng & Downing 2012). Under the assumption that all sentences have a focus, which can be a larger or smaller part of the sentence, the whole sentence is focused in a neutral context. This may be referred to as 'broad focus', or 'whole-sentence focus'. I use this latter terminology, following for instance Büring (2016). For example, I call a focus as in (12a), uttered in a neutral context in which no aspect of the sentence is salient, a 'broad focus'. If it is already salient that somebody

invited John, but not who, a speaker might utter (12b), which I refer to as having 'narrow focus' on *Mary*. A narrow focus, as I use the term, may be larger than a single word, but is crucially smaller than the entire sentence.

(12) a. [Mary invited JOHN]$_F$.
     b. [MAry]$_F$ invited John.

[adapted from Truckenbrodt 2012: 2, exs. 4 and 5]

Focus is associated with prosodic prominence in many languages (e.g. Jackendoff 1972; Truckenbrodt 1995). This is also illustrated in (12), in which the main pitch accent in (12b) falls on *Mary*. A broad focus coincides with a normal, 'neutral' prosody (e.g. Büring 2012), as in (12a), with the accent on *John*.

I assume in this dissertation that in certain languages, the context may also affect what is focused in *wh*-questions. This view is controversial, as it is often assumed that the focus in *wh*-questions constitutes the *wh*-phrase, irrespective of the preceding context (e.g. Culicover & Rochemont 1983; Lambrecht & Michaelis 1998). In Chapter 3, I consider the possible arguments for the idea that the *wh*-phrase is always the focus and argue that they are not conclusive. Chapter 4 provides evidence to support the assumption that like in declaratives, the focus in in-situ *wh*-questions may differ depending on the context.

As was shown in (11) and (12), information structure may affect the prosody of speech utterances. In addition, several authors claim that focus plays a role in intervention effects (Beck 2006; Hamlaoui 2010; Kim 2002). As focus and intervention effects are two of the areas in which the relevant data remain unclear, I investigate French *wh*-in-situ questions from the perspective of their information structure. In addition, I include the distinction between echo and information seeking questions in the investigation. While these two types of question may be string-identical ((6) and (7)), I will show in Chapter 3 that their properties are different. To clarify the relevant data, I will therefore explicitly distinguish and compare these two question types.

Both information structure and the distinction between echo and information seeking questions interact with the context in which a *wh*-in-

situ question is felicitously used. As was illustrated in (11) and (12), a particular type of context invites a sentence with a certain information structure. Conversely, a sentence with a certain information structure is felicitous in a particular type of context. As I indicated above, a particular information structure may also relate to other properties of the sentence, such as its prosody or the occurrence of intervention effects. The relation between echo questions and context is different. In contrast to an information seeking question, an echo question 'echoes' the preceding utterance and can therefore only be uttered in a particular context.[3] For instance, the echo question in (13) is not felicitous in the given context, while the corresponding information seeking question is.

(13) Anne and Betty are neighbours having a chat outside their house.
     They both visited the same event with their husband.
     Anne's husband John collects antiques.

     Anne: We really liked the annual fair.

     Betty: a. So did we.
                By the way, what did John buy?   (information seeking)
            b. #John bought WHAT?   (echo)

This reflects the semantic properties of echo questions, which, as I will suggest, also relate to prosody and intervention effects. Studying French *wh*-in-situ questions from these two angles will therefore provide more insight into their characteristics.

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[3] Unlike with information structure, it is not the case that a particular context 'asks for' an echo or an information seeking question. When part of the previous utterance was not clearly audible as in (7), it is also felicitous to ask an information seeking question.

3   Outline of the work

The dissertation has the following structure.

Chapters 2 and 3 provide the background that is needed to understand the later chapters. Chapter 2 examines the literature regarding the properties of French *wh*-in-situ questions. It notes a recurring pattern with respect to the presence of a large sentence-final rise (i.e. prosody), intervention effects and the 'extra-strong presupposition'. For each of these issues, some authors observe the phenomenon, other authors deny its existence and yet other authors observe its presence in a subset of the cases. I raise the possibility that there is some genuine variability in the data that is related to underlying factors.

Chapter 3 further develops and motivates the adopted approach. It provides background information on the notions of focus and givenness I employ and on the distinction between echo and information seeking questions. Furthermore, it considers the possible arguments against the adopted approach to focus in *wh*-questions and argues that they are not conclusive. It also includes a proposal regarding the notion of contextual salience, which accounts for the additional role of world knowledge and beliefs in focus and givenness.

Chapter 4 reports a production experiment that investigates the influence of a) information structure and b) the distinction between echo and information seeking questions on the prosody of French *wh*-in-situ questions. It describes the elicitation paradigm that was designed to elicit a particular type of question (echo or information seeking) and a particular information structure in information seeking questions. The chapter provides prosodic descriptions of French *wh*-in-situ (echo) questions. It demonstrates that the focus in these *wh*-questions may differ, depending on the context. It also confirms and adds to claims in the literature regarding focus marking in French. In addition, the chapter shows that French echo questions are prosodically distinct from information seeking questions, even if their information structure is the same.

Chapter 5 investigates the influence of context on intervention effects. It builds on work by Starke (2001) and Baunaz (2005; 2011; 2016), who note that a particular type of context voids intervention effects. I propose that what characterizes such a context is that it makes the entire *wh*-in-situ question given (using Büring's (2016) notion of givenness), which I call 'Maximally Given'. I assume that intervention effects arise when an intervener blocks covert movement of the *wh*-phrase. Yet Maximal Givenness licenses the use of a contextually supplied choice function (cf. Kratzer (1998) for specific indefinites), which forms an alternative for covert movement. Maximal Givenness makes the choice function recoverable for the interlocutor. The proposal accounts for both variation among different interveners and regarding judgments of sentences with the same intervener. It also explains the absence of intervention effects in echo questions.

Chapter 6 extends the proposal that French has two mechanisms for interpreting *wh*-in-situ, i.e. covert movement and a choice function, beyond intervention effects. The first half of the chapter investigates several properties of questions interpreted via the two mechanisms. It first presents a rating study that investigates to what extent questions of the form *Tu as acheté des quoi*, lit. 'You have bought INDF.ART what' are acceptable as non-echo questions interpreted via the two mechanisms and as echo questions. It then returns to the data variation reported in Chapter 2. I report on a second rating study that investigates the acceptability of *wh*-in-situ in indirect questions, inside a strong island and in long-distance questions, in an out of the blue context. Under my proposal, *wh*-in-situ in such a context is interpreted via covert movement. I then hypothesise that the grammar of certain speakers only allows for choice function *wh*-in-situ, while other speakers have choice function as well as covert movement *wh*-in-situ. In combination with the need for a certain context to license choice function *wh*-in-situ, this hypothesis explains the seemingly contradictory data regarding the extra-strong presupposition, the sentence-final rise and intervention effects. In the second half of the chapter, I argue that the choice function account is also a promising direction of research to explain contextually restricted *wh*-in-situ in *wh*-fronting languages like English and German. Finally, I compare

the properties of contextually restricted *wh*-in-situ to those of echo questions, resulting in some observations about echo questions and a proposed direction of research regarding their structure.

Chapter 7 concludes the dissertation. It provides an overview of the established properties of French *wh*-in-situ questions interpreted via the two mechanisms. It also discusses outcomes of the research regarding echo questions, focus and givenness, methodological considerations and implications for the cross-linguistic picture.

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.

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[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

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[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.

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[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?'

<div align="right">[Starke 2001: 22, ex. 51d]</div>

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?'

<div align="right">[Obenauer 1994: 296-297, ex. 30b, glosses added]</div>

    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 protocol[7], 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 F0 (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

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[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

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[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.'

<div align="right">[Mathieu 2016: 16-17, ex. 36]</div>

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?'

<div align="right">[Hamlaoui 2011: 31, subscripts added]</div>

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 Edimbourg* 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).

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[11] Proposals regarding French can be found for instance in Obenauer (1994), Bošković (2000), Starke (2001), Mathieu (1999) and Baunaz (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?'

<div align="right">[Mathieu 1999 : 447-448, ex. 12, typographic emphasis added]</div>

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?'

<div align="right">[Engdahl 2006: 100, ex. 23]</div>

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.

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[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).

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[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?'

<div align="right">[Cheng & Rooryck 2000: 24, fn. 3, adapted from Chang 1997]</div>

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

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[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?'

<div align="right">[Déprez et al. 2012: 145-146, ex. 9a]</div>

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?'

<div align="right">[Starke 2001: 52, ex. 123b]</div>

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.

3 Context: the relevant notions

In the previous chapter, I discussed the different points of view in the literature regarding the properties of French *wh*-in-situ questions. As indicated in Chapter 1, the dissertation investigates the properties of these questions from two angles, both of which relate to context. The first is the information structure of the sentence (focus and givenness) and the second is the distinction between echo and information seeking questions (i.e. ordinary non-echoic questions). In this chapter, I develop and motivate my approach to focus and givenness (Section 1) and the distinction between echo and information seeking questions (Section 2). Together with Chapter 2, the chapter provides the background information that is needed to understand the remainder of the dissertation.

1 Information structure

The term information structure, as used in this dissertation, concerns focus and givenness (leaving aside the notion of topic). I start by briefly introducing these concepts and explaining why information structure may contribute to the observed data variation (Section 1.1). I then discuss focus (in *wh*-questions) (Section 1.2) and givenness (Section 1.3) in more detail, as well as the notion of contextual salience (Section 1.4), which plays a crucial role in both focus and givenness.

1.1 Introduction

The terms focus and givenness were also introduced in Chapter 1. As in Chapter 1, the notation $[\,]_G$ indicates that an expression is given, $[\,]_F$ indicates focus, and capital letters represent a pitch accent.

An expression is given if it already has a certain connection to the previous context, as in (1).

(1) Sinatra's reputation among industry musicians grew swiftly, and
    James always supPORted [the singer]$_G$.

<div align="right">[Büring 2016: 18, ex. 1]</div>

The sentence in (1) mentions *Sinatra*. This makes the referent of *Sinatra*, that is, the singer Frank Sinatra, contextually salient. When the expression *the singer* is mentioned later in the sentence, its referent is already salient, as a result of which *the singer* is given (e.g. Büring 2016). As givenness is associated with deaccentuation in languages like English, the accentuation pattern in (1) is more natural than the one in (1') (Ladd 1980; Rochemont 1986; Selkirk 1984b).

(1') #Sinatra's reputation among industry musicians grew swiftly, and
    James always supported [the SINGer]$_G$.

<div align="right">[adapted from Büring 2016: 18, ex. 1]</div>

Focus also indicates the relation of a sentence to the previous context, albeit in a different way. That is, the focus of a sentence is the only part of the content that does not have to be salient in the preceding context (e.g. Büring 2016; Schwarzschild 1999). Consider the example in (2).

(2) A: Who wants coffee?
    B: a. [EDE]$_F$ wants coffee.
        b. #Ede wants [COffee]$_F$.

<div align="right">[adapted from Rooth 1997: 271, ex. 1]</div>

Because of Speaker A's utterance, 'wanting coffee' is salient in the context. *Ede* is the only part of (2a) that is not contextually salient; this is the focus of the sentence. The focus corresponds to the position of the *wh*-phrase in the preceding *wh*-question ('Question-Answer Congruence', Rooth 1992). That is, it indicates that it is Ede who wants coffee, and not John, Sue or Peter, etc. If the focus would be on *coffee* as in (2b), it would indicate that

Ede wants coffee, rather than for instance tea. This would not be in line with speaker A's question. As focus is associated with prosodic prominence (in many languages) (Jackendoff 1972; Truckenbrodt 1995), the accentuation pattern in (2a) rather than (2b) is the natural one in this context. In languages like English, focus determines the placement of the main pitch accent of the sentence (the Nuclear Pitch Accent), which falls on *Ede* in (2a) and on *coffee* in (2b).

1.2   Focus

This section discusses focus in more detail. First, I introduce two conceptions of focus, both of which are common in the literature (Section 1.2.1). This serves as background to a discussion about the role of focus in *wh*-questions. A common assumption in the literature is that in *wh*-questions, the *wh*-phrase constitutes the focus of the sentence. I examine the arguments for this view and argue that they are not conclusive, i.e. do not provide evidence against my assumption that the focus in certain *wh*-questions may differ depending on the context (Section 1.2.2). Finally, I specify my assumptions regarding the semantic representation of focus in *wh*-questions (Section 1.2.3).

1.2.1   Introducing two conceptions of focus

Two different conceptions of focus are common in the literature. I will refer to them as the 'new information approach' and the 'alternative semantics approach'.

The new information approach regards focus as effectuating a partition of the information content of an utterance (e.g. Halliday 1967; Jackendoff 1972; Lambrecht 1994). Under this view, focus constitutes the 'new' information in the utterance, the informative part. The 'old' information is the background, the part that is already presupposed. Consider speaker B's utterance in (3), in which *the movies* is the focus and the rest of the utterance is the background.

(3) A: Where did you go last night?
    B: I went to [the MOvies]$_F$.

                        [adapted from Lambrecht 1994: 209, ex. 5.1]

According to the new information approach, it is 'old information' in speaker B's utterance that "speaker went to x" (Lambrecht 1994: 210). The 'new information', i.e. what speaker B's utterance contributes, is that the place where the speaker went to last night is *the movies*.

The other, alternative semantics approach conceives of focus as relating an utterance to a set of relevant alternatives (e.g. Krifka 2008; Rooth 1985; 1992; Zimmermann & Onea 2011). According to the 'alternative semantics of focus' (Rooth 1985; 1992), a sentence has both an ordinary semantic value and a focus semantic value. The ordinary semantic value of speaker B's utterance in (3) is simply the proposition that speaker B went to the movies (last night) (4a). Its focus semantic value is a set of propositions, namely the set containing the propositions that speaker B went to her aunt, speaker B went to Amsterdam, speaker B went to Sue's party, and so forth (4b).

(4) *I went to [the MOvies]$_F$.*

    a. Ordinary semantic value
       $[\![$ I went to [the MOvies]$_F$ $]\!]^O$ = 'I went to the movies'

    b. Focus semantic value
       $[\![$ I went to [the MOvies]$_F$ $]\!]^F$ = {I went to my aunt,
       I went to Amsterdam, I went to Sue's party, …}

The effect of the focus in speaker B's utterance in (3) is to relate the ordinary meaning 'I went to the movies' to the set of alternatives in (4b). In other words, "focus indicates for which part of its containing utterance U there existed relevant alternatives before U was uttered" (Zimmermann & Onea 2011: 1652).

Krifka (2008) argues against the new information approach, in favour of the alternative semantics approach. He shows that the notion of "newness" in some cases gives the wrong predictions. He also states that it

can be subsumed under the notion of focus as introducing alternatives. Namely, what is felt to be the 'new' part of a sentence is usually the selection of the ordinary semantic value in favour of the alternatives in the set. Krifka states that while there is a statistical correlate between 'newness' and the presence of alternatives, focus is best defined in terms of the latter.

1.2.2   Focus in *wh*-questions

With the above background in place, I consider the role of focus in *wh*-questions. As mentioned above, it is often assumed that the focus in *wh*-questions is the *wh*-phrase, regardless of the preceding context (e.g. Culicover & Rochemont 1983; Haida 2007; Lambrecht & Michaelis 1998; Rochemont 1978). This would mean that focus plays a different role in *wh*-questions than it does in declaratives, where what is focused differs, depending on the preceding context. This section reviews the main arguments given in the literature for the view that the *wh*-phrase constitutes the focus of a *wh*-question. I argue, following Jacobs (1984; 1991), Beyssade (2006), Eckardt (2007) and others, that these arguments do not provide evidence against the approach adopted in the dissertation. In particular, I suggest that there is no evidence against the idea that in certain languages, the focus in *wh*-questions depends on aspects of the preceding context, as in declaratives (cf. Büring 2016; Di Cristo 2016; Engdahl 2006; Erteschik-Shir 1986; Reich 2002; Rosengren 1991). Based on the behaviour of *wh*-fronting questions, one of the languages in which context affects the focus in *wh*-questions is French (Beyssade 2006; Beyssade et al. 2007).

One argument given in the literature for the view that the *wh*-phrase is always the focus is that the *wh*-phrase is the 'new' part of a question (Gunter 1966; Rochemont 1978). This argument is grounded in the new information approach to focus. It relates to the assumed existential presupposition of *wh*-questions, as the existentially presupposed content is taken to be the 'old information' of the utterance. For instance, the question in (5) is taken to presuppose the existence of an entity answering

the question, i.e. something that Mary bought.[15] The information that Mary bought something is therefore the 'old information' of the utterance.

(5) What did Mary buy?

The only part of the utterance that is not 'old information' is the *wh*-phrase, which is therefore seen as the 'new information' of the utterance. Similarly, in an answer to the question, i.e. *Mary bought* [*a book*]$_F$, the part of the sentence that answers the *wh*-phrase contains new information (cf. example (2) above).

However, this argument loses its power on the alternative semantics approach to focus. The new information approach is tailored to the declarative sentence type, which typically conveys information. As a *wh*-question typically *elicits* information, it is hard to see how any other part than the *wh*-phrase could be 'new information'. Yet the alternative semantics approach can also be applied to *wh*-questions. I illustrate this with (6).

(6) We assume Jones didn't meet with Barnes.
     But when did Jones CALL Barnes?

[Büring 2016: 96, ex. 65]

In (6), 'Jones calling Barnes' is contrasted with 'Jones (not) meeting with Barnes'. As in declaratives, the focus seems to indicate for which part of the utterance there existed relevant alternatives before it was uttered. These would be of the form in (7b). The focus on *call* then has the effect of relating the ordinary meaning in (7a) to the set of alternatives.

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[15] Recall from Chapter 1 that I consider what is traditionally called an existential presupposition to be an existential implicature, following Baunaz (2016), Büring (2016) and Jacobs (1991). I will briefly come back to this below.

(7) *when did Jones* [*CALL*]$_F$ *Barnes*

    a. Ordinary semantic value

      ⟦ when did Jones [CALL]$_F$ Barnes ⟧^{O} = 'when did Jones call Barnes'

    b. Focus semantic value

      ⟦ when did Jones [CALL]$_F$ Barnes ⟧^{F} = {when did Jones see Barnes,
      when did Jones tease Barnes, when did Jones help Barnes, ...}

So while the new information approach is not well-suited to the idea that
the focus in *wh*-questions is anything other than the *wh*-phrase, the
alternative semantics approach allows for the idea that the focus in *wh*-
questions differs depending on the context. Under this latter view, the
existential presupposition or implicature (see footnote 13) associated with
wh-questions should be distinguished from the notion of background to a
focus (Jacobs 1991). The question in (6) still introduces the implicature
that Jones called Barnes at some point, but this does not affect the focus
structure.

    The second argument given in the literature for the view that the *wh*-
phrase is the focus relates to the similarity between the focus semantic
value of a declarative and the denotation of a *wh*-question. Both of these
involve alternatives, which I illustrate with example (2), repeated as (8).

(8) A: Who wants coffee?
    B: a.   [EDE]$_F$ wants coffee.
        b. #Ede wants [COffee]$_F$.

                                            [adapted from Rooth 1997: 271, ex. 1]

On the alternative semantics approach to focus, the effect of focus in (8a)
is to relate the ordinary meaning of the utterance (i.e. the proposition that
Ede wants coffee) to the set of alternatives in (9).

(9) {John wants coffee, Sue wants coffee, Peter wants coffee, ...}

The denotation of a question is standardly taken to be a set of
propositions that form potential (true) answers to it (Hamblin 1973;

Karttunen 1977). Therefore, a set of propositions of as in (9) is also the denotation of speaker A's question in (8).[16] The similarity between the sets of alternatives involved in the question and in the focus semantic value of the answer is seen as an argument for the idea that the *wh*-phrase is the focus in *wh*-questions. For instance, Beck (2006: 12) states that "*wh*-phrases, like focus, introduce a set of alternatives".

However, even if *wh*-questions and focus both involve alternatives, this does not mean that they resemble each other in the sense that the alternatives would have the same status (Büring 2016). Whereas a *wh*-question *denotes* a set of alternatives, focus *relates* the ordinary meaning of a sentence to an unrestricted set of alternatives. Büring calls the alleged resemblance between the two sets "a consequence of loose talk" (p. 98).

Another argument that has been provided for the idea that the *wh*-phrase constitutes the focus in a *wh*-question pertains to Question-Answer Congruence. Question-Answer Congruence regulates what is an appropriate answer to a question (see Section 1.1). It refers to the observation that "the ordinary semantic value of a question be a subset of the focus semantic value of a corresponding answer" (Rooth 1992: 9-10). Question-Answer Congruence is also seen as an indication of the close relationship between a question denotation and focus.

Note however that it is the *ordinary* semantic value of a *wh*-question that is involved in regulating what is an appropriate answer. This does not preclude the possibility that a question also has a focus semantic value that is affected by the preceding context.

A final argument that is given for the idea that the *wh*-phrase is always the focus is that the *wh*-phrase is in many languages marked as the focus, for instance by syntactic movement, prosody or a particle. (Data from different languages can be found in Haida (2007) or Sabel (2006).) It has been shown for many languages with a designated position in the

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[16] To be precise, in the focus semantic value of the answer in (8a), the individual wanting coffee is only restricted by semantic type. Yet in the set denoting speaker A's question in (8), the individual wanting coffee is further restricted to be a person. This is due to the meaning of the *wh*-phrase *who*. Consequently, the set denoting the question is a subset of the focus set involved in the answer.

sentence for foci, such as Hungarian, Slavic and Bantu languages, that the *wh*-phrase is also situated in this position (e.g. Aboh 2006; Bǒsković 1999; Horvath 1986; Lipták 2001). Likewise, some languages mark the *wh*-phrase prosodically as the focus of the question (Büring 2016; Ladd 2009). In these languages, the preceding context does not affect prosodic focus marking.

Yet, there is another group of languages that do not mark the *wh*-phrase as the focus of the question. According to Ladd (2009), languages fall into one of two groups in this respect (Ladd 2009: 226-227; see also Büring 2016: 96-98). That is, in many languages, context may affect the prosody of *wh*-questions. For instance, the accentuation represented in (10a) rather than in (10b,c) is the most neutral one, while renditions of the sentence as in (10b) or (10c) impose specific restrictions on the context in which they are used (Erteschik-Shir 1986, who cites Gunter 1966). (10b) might be uttered if the preceding context specifies that John ate the beans, but not at what point in time this happened. Similarly, (10c) could be uttered if the preceding context indicates the time at which John *prepared* the beans, but not when he ate them.

(10) When did John eat the beans?
    a. When did John eat the BEANS?
    b. WHEN did John eat the beans?
    c. When did John EAT the beans?

       [adapted from Erteschik-Shir 1986: 118, ex. 5, who cites Gunter 1966: 172]

A *wh*-word can carry the main pitch accent, as in (10b). Yet, this then corresponds to properties of the preceding context, as the context can lead to a narrow focus on the *wh*-phrase (Engdahl 2006; Erteshik-Shir 1986; Reich 2002; Eckardt 2007; Büring 2016: 96-98). So the argument that the *wh*-phrase is (prosodically) marked as the focus only holds for one group of languages. Based on the behaviour of *wh*-fronting questions, this group does not include French (Beyssade 2006; Beyssade et al. 2007).

All in all, the arguments given in the literature for the view that the focus in *wh*-questions equals the *wh*-phrase, irrespective of the context, are not conclusive. There are no clear objections against the idea that, in

certain languages including French, the context affects what is focused, in *wh*-questions as in declaratives.

1.2.3   Semantic representation of focus in *wh*-questions

I assume the semantic representation of focus in *wh*-questions that has been proposed by Jacobs (1984; 1991) and applied to French by Beyssade et al. (2004ab). (Alternative proposals can be found in Reich (2002) and in particular Eckardt (2007).) In Jacobs' approach, the partition of an utterance into focus and ground takes place within the scope of an illocutionary operator. The focus is the part of the content that is "inhaltlich besonders betroffen", i.e. specifically affected, by this operator (Jacobs 1984: 30). In declaratives, the focus is the part of the content that is asserted in particular, while in interrogatives, the focus is specifically affected by the QUESTION operator.[17] This operator represents the semantic interrogativity of the *wh*-phrase, i.e. the interrogative sentence type. The operator combines into a formula together with an utterance in which a variable is bound by a λ-operator. I illustrate this with the question in (11a), in which the focus is *in the living room*. The matching formula is displayed in (11b).[18]

(11) a. Who has eaten [in the LIving room]$_F$?
       b. QUESTION(λX_{NP} [# $\underline{\lambda Y_{PP}\,[X\ has\ eaten\ Y]}$, $\underline{in\ the\ living\ room}$ #])
                                                    background   focus
       c. λX_{NP} [X has eaten in the living room]

                                         [translated from Jacobs 1991: 202, exs. 2 and M2]

The utterance that combines with the QUESTION operator in (11b) contains the variable 'X', bound by a λ-operator. This corresponds to the *wh*-phrase *who*. The division of the utterance content into focus and

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[17] In Jacobs' work, which is written in German, it is called 'FRAGE'.

[18] The symbols '#...#' are used by Jacobs to indicate that the illocutionary operator, QUESTION in an interrogative, applies to the focus-background structure, which stands between '#...#'.

background takes place within the scope of the QUESTION operator. The background part of the formula contains the variable 'Y' at the position of the focus, which is bound by a second λ-operator. Function application of the background to the focus *in the living room* yields the meaning in (11c), which is the set of possible answers to the question, cf. the alternative semantics approach.

In summary, Section 1.2 considered the main arguments for the idea that the *wh*-phrase equals the focus in *wh*-questions, irrespective of the preceding context. I concluded that none of these are clear arguments against the assumptions put forward in Chapter 1. Following Jacobs (1984; 1991), Beyssade (2006), Eckardt (2007) and others, I therefore assume that in certain languages, the focus differs depending on the context, as in declaratives. Based on the behaviour of *wh*-fronting questions, one of these languages is French (Beyssade 2006; Beyssade et al. 2007).

Chapter 4 will show that focus plays an important role in the prosody of French *wh*-in-situ questions and the observed data variation, which provides evidence supporting the adopted approach.

1.3   Givenness

The second information structural notion that plays an important role in the dissertation is givenness. In this section, I present the definition of givenness I use (Section 1.3.1) and lay out how givenness relates to focus (Section 1.3.2).

1.3.1   Definition of givenness

Recall the example in (1), repeated here as (12). In this example, *the singer* is given because the referent of *Sinatra*, the singer Frank Sinatra, is already salient in the context.

(12) Sinatra's reputation among industry musicians grew swiftly, and
     James always supPORted [the singer]$_G$.

[Büring 2016: 18, ex. 1]

Contextual salience will play an important role in the dissertation. Following Büring (2016), I will call a salient meaning that makes an expression given a 'Contextually Salient Meaning (CSM)'. For instance, in (12), the relevant CSM is the singer 'Frank Sinatra', i.e. the referent of *Sinatra*.

I also use Büring's (2016) concept of givenness (13). It employs notions conceived of by Schwarzschild (1999), like the idea that entailment regulates what part of a sentence is given in a particular context.[19]

(13) *Given*
An expression is given if (following existential type shifting)
there is a CSM that entails it.

The definition in (13) states that an expression is given if there is a CSM that entails it. Yet, every part of a sentence can be given and entailment is a relation between two propositions. To solve this problem, Schwarzschild, followed by Büring, assumes an 'existential type shifting' operation that turns expressions into propositions.[20] For instance, an expression like *apple* can be type shifted into '$\exists x. [apple(x)]$', which is a proposition. If a phrase like *green apple* has been mentioned in prior discourse, it makes *apple* given, as '$\exists x. [green\text{-}apple(x)]$' entails '$\exists x. [apple(x)]$'. So an expression is given if there is a CSM that entails it, if necessary following existential type shifting.

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[19] Schwarzschild (1999: 151) treats referential expressions (like *the singer* in (12)) differently from expressions of other semantic types. He suggests that a referential expression is GIVEN when it is coreferential with a salient antecedent, while GIVENness of other types of expressions involves entailment, cf. (13). In contrast, Büring (2016) suggests that givenness as described in (13) can also account for referential expressions like *the singer*. I follow Büring (2016) here, but the difference is of no consequence for later chapters.

[20] Büring (2016) calls Schwarzschild's (1999) 'existential type shifting' 'existential closure'.

1.3.2   Relation of givenness to focus

One might think that given constituents are always those that are not focused, but this is not the case. First, note that it is possible to focus a pronoun (14), indicating that given constituents can be focused (Krifka 2008).

(14) Mary only saw [HIM]ᶠ.

[Krifka 2008: 263]

Example (14) contains a focus that is completely given. A focus can also be partially given. In (15), the VP is focused and part of the focus, *John*, is also given (Féry & Samek-Lodovici 2006).

(15) A: What did John's mother do?
     B: She [PRAISED John]ᶠ.

[Féry & Samek-Lodovici 2006: 136, ex. 17, A2]

So the notions of focus and givenness are not complementary (Büring 2016; Féry & Samek-Lodovici 2006; Krifka 2008).

I mentioned in Section 1.1 that (in languages like English) focus is associated with prosodic prominence, while givenness is associated with deaccentuation. So how do they interact prosodically when (part of) the focus is given? When a focus is completely given, focus accentuation overrides givenness deaccentuation (Büring 2016; Krifka 2008). Example (14) above, in which the pronoun *HIM* is focused, shows that focus is expressed by prosodic prominence, also when the focus is given. Yet when a focus is partially given, one part of the focus is still prosodically prominent, but the given part is deaccented (Büring 2016; Féry & Samek-Lodovici 2006; Krifka 2008). This can be seen by comparing (15) above to (16).

(16) A: What did John's mother do?
     B: She [praised BILL]ᶠ.

In both (15) and (16), the VP is focused. VP-final objects in a focused VP are normally accented, as in (16) (Féry & Samek-Lodovici 2006). Yet when part of the focus is also given as in (15), this part (i.e. *John*) is deaccented.

1.4   Contextual salience

Both focus and givenness rely on the notion of contextual salience. I therefore discuss this notion as proposed by Büring (2016), building on Schwarzschild (1999), in some detail (Section 1.4.1). I then propose a refinement of the notion and introduce the definition of a CSM I will employ in the dissertation (Section 1.4.2).

1.4.1   Büring's (2016) notion of contextual salience

Büring (2016) elaborates on Schwarzschild's (1999) notion of contextual salience. Although a definition of salience is not offered by either author, it is clear that it covers more than the case of literal repetition as in *green apple … apple* above. For instance, Schwarzschild mentions that the prior use of a hyponym can suffice, such as when previous mention of *gorilla* makes the expression *animal* GIVEN. Also, factors like the recency and frequency of use may affect what is salient.

   Both Büring (2016) and Schwarzschild (1999) include in contextual salience cases of literal repetition (*green apple … apple*), coreference (*Sinatra … the singer*) and hyponymy (*gorilla … animal*). Büring also mentions a case where general linguistic context makes an expression given, as in (17).

(17) A: The opposition want to impeach the president.
     B: I HATE [politics]$_G$.

                                                        [Büring 2016: 18, ex. 2]

In this example, there is no specific element in the preceding utterance that would count as a CSM. Nonetheless, *politics* in (17) is given, as is indicated by deaccentuation.

Both Büring and Schwarzschild also discuss cases where additional background assumptions play a role, such as world knowledge or beliefs (18).

(18) A: They invited Woody Allen as their keynote speaker.
      B: Yeah, they WANted a [New Yorker]$_G$.

> [Büring 2016: 129, ex. 51; cf. Schwarzschild 1999: 153, ex. 29]

In speaker's B's utterance in (18), *New Yorker* can be deaccented as given because 'Woody Allen' is made salient by speaker A's utterance. Yet, '∃Q. [Woody Allen Q]' does not entail '∃Q. [New Yorker Q]' unless the speakers' world knowledge that Woody Allen is a New Yorker is somehow involved in the entailment relation. A similar case is presented in (19).

(19) (She called him a Republican, and then) HE insulted HER.

> [Büring 2016: 128, ex. 50, who cites Lakoff 1968]

Here, the CSM that 'she called him a Republican' only entails '∃x∃y. [x insulted y]' if one takes for granted that calling someone a Republican constitutes an insult. Büring (2016: 128-131) observes that while world knowledge and beliefs can play an additional role, their exact role is hard to define.

Elaborating on Schwarzschild's notion, Büring notes that non-linguistic context can also make a meaning salient. This is shown in (20), in which the noun *dogs* has to be deaccented. Although not mentioned, the dog that walks into the room makes the concept 'dog' salient.

(20) During my visit to your house a dog walks into the room. I comment:

    a. I thought you HATED [dogs]$_G$.
    b. The building management doesn't ALLOW [dogs]$_G$.

> [Büring 2016: 100, ex. 4]

Similarly, in (21), the non-linguistic context makes the concept 'smoking' salient.

(21) Seeing someone's new pack of cigarettes:

  I thought you QUIT [smoking]$_G$.

                                              [Büring 2016: 18, ex. 3]

The observation that non-linguistic context can make a meaning salient will play an important role later in the dissertation.

Büring (2016) does not describe what determines whether a meaning becomes salient for a speaker. We would probably not want to say that everything one sees at some level of consciousness becomes salient, like the cup of tea on your desk or the people outside your window. This is similar for linguistic context: if the radio is on while you are working but you are not really listening, the commercials that are broadcasted may not make anything salient for you. The dog walking into the room in (20) is more than an observation that takes place 'in the background'. When the dog walks in, it is more of an event that enters the speaker's consciousness. One might then say that the event in (21) is 'noticing a new pack of cigarettes', since if the speaker does not notice the pack of cigarettes, there is nothing to make 'smoking' salient for him/her. As it is not clear what exactly makes something salient for a speaker, contextual salience is somewhat of a slippery notion.

What Büring (2016: 100-103) does clarify is the difference between the notions of contextual salience and presupposition (a presupposition being a background belief that is mutually known or assumed by the interlocutors). It is true that salience and presupposition often coincide, since the assertion of a sentence often results in the sentence's content being added to the common beliefs of the interlocutors. In that case, the content of the sentence is both salient and presupposed. However, a presupposition does not have to be salient, nor vice versa.

A meaning is presupposed but not salient when a belief is shared, e.g. as a matter of world knowledge, but is unrelated to the discourse situation. For instance, in speaker B's utterance in (22), it is presupposed that 'the speaker's mother is a senator', cf. the factive verb *know*.

(22) A: The Burtletts don't want to see you.

 B: Do they know my mother is a SEnator?

[Büring 2016: 101, ex. 8]

Yet, the current context does not make 'senator' salient. In line with this, there is no givenness deaccentuation of *senator*.

The opposite case, in which a meaning is salient but not presupposed, is exemplified in (23).

(23) A: What if the Johnsons show up?

 B: I DOUBT they'll show up.

[Büring 2016: 100, ex. 6]

In speaker B's utterance in (23), it is not presupposed that 'the Johnsons will show up'. Speaker B in fact expresses that he/she doubts this. Still, 'the Johnsons showing up' is salient here because it has been mentioned by speaker A. This explains the givenness deaccentuation of *they'll show up*.

An additional argument to distinguish salience from presupposition is the fact that only a proposition, i.e. the meaning of a declarative sentence, may be presupposed. Yet, any type of constituent may be contextually salient, for instance through previous mention. Consequently, constituents of any size can get focal prominence or undergo givenness deaccentuation.

Summarising this section, Büring's (2016) notion of contextual salience, which elaborates on Schwarzschild (1999), includes literal mention or coreference, hyponymy, salience due to general linguistic context and salience due to non-linguistic context. It is clear that shared assumptions like world knowledge and beliefs may play an additional role in the entailment relation, but the way in which this works is not well understood.

1.4.2 A refinement of the notion of contextual salience

In the previous section, I discussed Büring's concept of contextual salience. In this section, I suggest a modification of this notion. It is clear

from the above that this will indirectly affect focus and in particular givenness. What I suggest is that contextual salience is better viewed as a subjective notion. This will explain the additional role of world knowledge and beliefs.

If a meaning, e.g. 'Sinatra', is salient in the context, for whom is it salient? It should at least be salient for the speaker, who consequently deaccents *the singer*. Does it have to be salient for the addressee as well? Consider what would happen if the addressee in (20) above was, for example, looking out of the window and did not notice the dog walking in. Upon hearing (20a) or (20b) with deaccentuation of *dogs*, the addressee might look around for the dog(s) he/she had apparently missed. In other words, the speaker can deaccent *dogs* if this does not happen to be salient for the addressee. Yet, the addressee is not irrelevant. In a situation where he/she clearly could not have seen the dog, as in a conversation on the phone, the accentuation pattern in (20) would be odd.[21] In that situation, the speaker should know that the presence of a dog at his/her side of the phone does not make the concept 'dog(s)' salient for the addressee. A speaker may not always be aware of whether or not a meaning is salient for an addressee. It takes at least attention to know whether something is salient for someone else, and in general, one cannot be sure about what is salient for another person. Still, while a CSM must be contextually salient for the speaker, the speaker should also not have reason to believe that it is not salient for the addressee.

This subjective view of contextual salience, i.e. as salient *for someone*, can explain the additional role of associations and beliefs. Consider again example (18), here repeated as (24).

(24) A: They invited Woody Allen as their keynote speaker.
     B: Yeah, they WANted a [New Yorker]$_G$.

                        [Büring 2016: 129, ex. 51; cf. Schwarzschild 1999: 153, ex. 29]

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[21] Not only the accentuation pattern but also the content of the utterance itself would be odd.

In (24), it is part of speaker B's active knowledge that Woody Allen is a New Yorker. For this speaker, Woody Allen being a New Yorker is a strong association that is made salient upon hearing *Woody Allen*. I suggest that in this example, the relevant CSM *as it is perceived by the speaker* is not exactly 'Woody Allen', but something like 'Woody Allen, who is a New Yorker'. Following existential type shifting, '∃Q. [Woody Allen, who is a New Yorker Q]' then entails '∃Q. [New Yorker Q]', which makes *New Yorker* given. This resolves Büring's problem as described in the previous section.

The prediction is then that the associations and beliefs that are involved in a CSM should be contextually salient for the speaker, while the speaker should not have reason to believe that they are not salient for the addressee. This prediction seems to be born out. For speaker B's deaccentuation of *New Yorker* in (24), it is not necessary that Woody Allen being a New Yorker is also salient for speaker A. Speaker B may not be thinking very much about whether or not speaker A knows this fact. Yet, if a speaker knows that the addressee does not have the association, the deaccentuation is strange. This is illustrated in (24'), a revised version of (24).

(24') A: They invited Stefan Glasbergen as their keynote speaker.
       B: Yeah, they WANted [someone from Leiden]$_G$.

Speaker B could use this accentuation pattern if I am the addressee, as I am very aware that Stefan Glasbergen is from Leiden, since he is my husband. Yet, speaker B would not do so if she knows that the addressee will not have the association.

Another example is (19), here repeated as (25).

(25) (She called him a Republican, and then) HE insulted HER.

[Büring 2016: 128, ex. 50, who cites Lakoff 1968]

One can assume that for the (fanatical Democrat) speaker of (25), the beginning of the utterance makes salient something like 'she called him a Republican and I consider that an insult'. As this makes 'someone

insulting someone' salient, it licenses the foci in (25). Obviously, the beginning of the utterance would not make the same thing salient for all speakers. Yet the speaker can utter the sentence with this accentuation pattern without knowing the political views of the addressee; he is merely expressing his own. Still, the accentuation pattern does convey the message that the speaker expects the addressee to share these views, and if not, that he should.

So the view of contextual salience as a subjective notion explains why world knowledge and beliefs may play an additional role in focus and givenness, which was not clear before (Section 1.4.1). It also makes it easy to see why general linguistic context can make a concept salient, as in (17), repeated as (26).

(26) A: The opposition want to impeach the president.
     B: I HATE [politics]$_G$.

                                                          [Büring 2016: 18, ex. 2]

Speaker A's utterance does not contain a particular expression that would count as a CSM for *politics*. Yet, on a subjective view of contextual salience, it is likely that the concept 'politics' becomes salient for speaker B upon hearing A's utterance. The case of hyponymy may be seen in the same light. When a speaker hears *gorilla*, what may become salient for him/her is 'the animal gorilla', i.e., including the world knowledge that gorillas are animals. This is not so different from the case of 'Woody Allen, who is a New Yorker' (24), where world knowledge also contributes the relevant property.

Consequently, the definition of a CSM that I will employ in this dissertation is the one in (27).

(27) *Contextually Salient Meaning (CSM) – my definition*
     A meaning is a CSM if it is perceived by the speaker as contextually salient and the speaker has no reason to believe that it is not salient for the addressee.

As the precise content of a CSM can be affected by associations and beliefs, it may in some cases vary depending on the person and the precise context involved. I mentioned in Section 1.4.1 above that Büring's (2016) concept of contextual salience is somewhat of a slippery notion. My modification in (27) only adds to this. Yet, in Chapters 5 and 6, it will be exactly this vagueness that is necessary to account for the data. In particular, I will argue that the notions of contextual salience and givenness are important to understand the observed data variation regarding intervention effects.

2 Echo versus information seeking questions

In Section 1, I discussed focus and givenness, two notions of information structure that I will use to explain certain aspects of the data variation found for French *wh*-in-situ questions. I now turn to the other angle from which I study French *wh*-in-situ questions, namely the distinction between echo and information seeking questions (i.e. non-echoic questions). I first introduce echo questions and explain why the echo/information seeking distinction should be included in the study of French *wh*-in-situ questions (Section 2.1). The remainder of the section provides background information on echo questions and shows that they differ form information seeking questions regarding their syntactic (Section 2.2), semantico-pragmatic (Section 2.3) and prosodic properties (Section 2.4).

2.1 Introduction

The core property of echo questions is that they 'echo' the previous utterance (I will make this more precise below). The examples in (28) and (29) illustrate two types of echo questions that are commonly distinguished (Bartels 1997; Pope 1976). Example (28) displays an echo question that expresses a failure to perceive or understand part of the previous utterance.

(28) A: John bought #####[noise].
     B: John bought WHAT? (I did not hear you.)

Example (29) shows the type that is used to express an emotion in the spectrum of surprise, disbelief or outrage regarding part of the previous utterance.[22] This second type is only a question to some degree, as it can be answered by a confirmation ('Yes, that's right') as well as a repetition of part of the previous utterance ('a Porsche') (Artstein 2002).

(29) A: John bought a Porsche.
     B: John bought WHAT? (No way.)

In French, a *wh*-in-situ question may be either an echo question or an information seeking question. This is illustrated by (30) (an echo question) and (31) (an information seeking question).

(30) A: Jean a   invité #####[noise].
        Jean has invited
        'Jean invited #####[noise].'

     B: Jean a   invité qui ?
        Jean has invited who
        'Jean invited who? (I did not hear you.)'   (echo question)

(31)   Jean a   invité qui ?
        Jean has invited who
        'Who did Jean invite?'   (information seeking question)

The examples in (30) and (31) show that the two types of questions may be string-identical in French.

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[22] The term 'echo question' is used in a broader sense in Marga Reis' work, where it contains all questions with *wh*-in-situ word order in German, including those that do not echo a previous utterance. I discuss this latter type of *wh*-in-situ question extensively in Chapter 6.

Yet, it will become clear below that the properties of echo and information seeking questions are different. Moreover, there are some areas in which French *wh*-in-situ questions display data variation and part of the data shares the relevant property with echo questions. In order to clarify the properties of French *wh*-in-situ questions, it is therefore necessary to distinguish explicitly between the two question types.

In what follows, I provide an overview of the areas in which the two types of questions differ and the echo/information seeking distinction may help to clarify the data.

2.2   Syntactic properties

From a syntactic point of view, the most obvious property of echo questions is the fact that their *wh*-phrase can be left in-situ in many languages that front the *wh*-phrase in information seeking questions (i.e. *John bought what?* versus *What did John buy?*) (Artstein 2002; Reis 1992). There are many other syntactic differences between the two question types.

For instance, echo questions can take non-standard forms as in (33), or even as in (34), using the *wh*-phrase to replace parts of the sentence that a *wh*-phrase cannot replace in an information seeking question (Bolinger 1987; Cooper 1983; Janda 1985).

(33) A: John bought a #####[noise].
        B: John bought a WHAT? (I did not hear you.)

(34) Bill is a WHAT-dontist?

[Artstein 2002: 103, ex. 28]

In information seeking questions, such forms are infelicitous whether the *wh*-phrase is fronted (35a) or in-situ in a multiple question (35b).

(35) a. *A what did John buy?   (information seeking)
        b. *Who bought a what?   (information seeking)

Another feature of echo questions is that they are infelicitous as indirect questions (36) (Ginzburg & Sag 2000; Sobin 2010).[23]

(36) a. *We wondered [Dana saw WHAT]. (echo)
      b. We wondered [what Dana saw].   (information seeking)

[Ginzburg & Sag 2000: 271, ex. 40a]

As was discussed in Chapter 2, French *wh*-in-situ questions are also infelicitous as indirect questions.

Also, in several languages in which *wh*-in-situ questions display intervention effects, these effects are absent in echo questions (Engdahl 2006; Poschmann 2015: 107-113; Reis 2012). Recall that intervention effects were discussed in Chapter 2 as a topic in which the data displays much variation.

So while the syntactic properties of echo and information seeking questions differ, some properties of echo questions may be shared by (part of the)information seeking French *wh*-in-situ questions.

2.3   Semantico-pragmatic properties

I now turn to the semantico-pragmatic properties, under the heading of which I discuss the core pragmatic property of echo questions, a semantics that reflects this property, the relation between an echo question and the utterance it 'echoes' and the information structure of echo questions.

Starting with the core pragmatic property, the use of an echo rather than an information seeking question signals that the speaker of the echo question does not yet accept a previous discourse move (Biezma 2018; Engdahl 2006; Ginzburg & Sag 2000; Poschmann 2015). In the case of an echo question expressing auditory failure, the speaker of the echo

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[23] This is different in echo questions with more than one *wh*-phrase, in which one *wh*-phrase has moved to the Spec CP of the indirect question as in (i), which are felicitous.

  (i) A: He wondered when Mary saw #####[noise].
       B: He wondered when Mary saw WHAT?

question did not understand or perceive part of the previous utterance, and is therefore not yet in a position to accept it. In the case of an echo question expressing surprise, the speaker is surprised by part of the previous utterance or does not believe it, and hence refuses to accept it for that reason. So an echo question raises a question regarding an aspect of the previous utterance, which gives rise to the 'echoing' character.

To some extent following Engdahl (2006) among others, I assume a semantics for echo questions in which this difference with information seeking questions is reflected. As already mentioned, the denotation of an information seeking *wh*-question is generally taken to be the set of propositions that constitute possible answers to it, as depicted in (37) (Hamblin 1973).

(37) *Information seeking* wh-*question*
    ⟦What did John buy?⟧ = { John bought a book,
                                                  John bought a coffee,
                                                  John bought a house, . . . }

The meaning of an echo question like *John bought WHAT?* can be paraphrased as in (38) (e.g. Engdahl 2006; Ginzburg & Sag 2000).

(38) What did you say/assert (just now) that John bought?

Its meaning can therefore be analysed as expressing the potential content of the preceding utterance, as in (39).

(39) Wh-*echo question*
    ⟦John bought what?⟧ =

    answer: you said that John bought [a book]   or
              you said that John bought [a coffee] or
              you said that John bought [a house] etc.

I will explain in Chapter 6 that I do not consider these potential answers to be a set of alternative propositions, as the referent for the *wh*-phrase

has already been fixed by the preceding utterance (see also Section 5 of Chapter 5).

Due to their pragmatics there is a close relation between an echo question and the utterance it 'echoes'. Some authors assume that the wording of an echo question must copy the wording of the previous utterance (Sobin 2010). This is however not the case: the relation between an echo question and its preceding utterance can be far more loose (Beck & Reis 2018; Blakemore 1994; Noh 1998; Reis 2012). For instance, an echo question may employ different wording than the preceding utterance (40).[24] Moreover, 'the president' and 'Mr Clinton' are not semantically equivalent, as pointed out by Blakemore (1994).

(40) A: Mr Clinton will be speaking tonight.
     B: The president will be speaking WHEN?

[Blakemore 1994: 208, ex. 36]

Moreover, Reis (2012) shows that no single word in the echo question need be the same as in the preceding utterance (41).

(41) A: Hat Lisa schon etwas darüber gesagt,
        wie es ihrem Sohn am MIT gefällt?
        'Has Lisa already said something about how her son likes MIT?'

     B: Tom studiert jetzt WO?
        'Tom is now studying WHERE?'

[Reis 2012: 5, ex. 11]

Note that the connection between the utterances in (41) relies a lot on the background knowledge of the echo question speaker.

Turning to the information structure of echo questions, it has often been noted that echo questions always have a narrow focus on the *wh*-word, as is illustrated in (42) (Artstein 2002; Bartels 1997; Jacobs 1991; Reis 2012).

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[24] This example could also receive a non-echoic interpretation.

(42) A: John bought #####[noise] book.
     B: John bought WHICH book? (I did not hear you.)

Only the *wh*-word *which* is focused in this example, as the whole non-*wh* part of the question is 'echoed' from the previous utterance. If it is true that information seeking *wh*-in-situ questions allow for different focus structures, depending on the context, the two types of question differ in the focus structures they allow.

Summarising this section, the semantico-pragmatic properties of echo questions clearly distinguish them from information seeking questions. Echo questions raise a question regarding an aspect of the utterance they echo. The wording of an echo question does not have to copy the wording of the previous utterance. Unlike information seeking questions, echo questions always have a narrow focus on the *wh*-word.

2.4   Prosodic properties

The final area of grammar I discuss is prosody. There have been prosodic comparisons between echo and *wh*-in-situ information seeking questions in several languages. This section provides a brief overview, focussing on the type of echo question that expresses auditory failure. Echo questions expressing surprise involve an additional issue, which is that the emotion of surprise itself can also affect the prosody of speech utterances (Hirschberg & Ward 1992).

Although the prosody of echo questions expressing auditory failure differs cross-linguistically, it seems to be distinct from the prosody of information seeking questions in most languages for which this has been investigated. The following, tentative, generalisation seems to hold within the small sample of languages for which I found relevant descriptions:

(A) In languages in which *wh*-in-situ information seeking questions are uttered with a falling intonation, echo questions display a sentence-final rise.

(B) In languages in which *wh*-in-situ information seeking questions are uttered with a rising intonation, echo questions display an expanded pitch range in addition to a sentence-final rise.

Brazilian Portuguese (Kato 2013), Farsi (Esposito & Barjam 2007; Sadat-Tehrani 2011) and Manado Malay (Stoel 2007) are examples of pattern (A); pattern (B) is exemplified in North-Central Peninsular Spanish (González & Reglero 2018), Greek (Roussou et al. 2014) and Shingazidja, a Bantu language spoken on Comoros (Patin 2011). German also follows pattern (B), but the difference between the question types is very small (Repp & Rosin 2015), possibly because information seeking *wh*-in-situ is restricted in this language (Poschmann 2015; see also Chapter 6). Mandarin Chinese seems to be the only language for which the two types of question have been compared, but no distinct prosody for echo questions expressing auditory failure was consistently found (Hu 2002).

In short, echo questions have been shown to be prosodically distinct from information seeking questions in several languages. In a subset of these, echo questions are distinguished from information seeking questions by a sentence-final rise. Recall that the presence of a sentence-final rise is also a much debated claim regarding French *wh*-in-situ information seeking questions (Chapter 2). Involving the echo/information seeking distinction in the study of French *wh*-in-situ questions may therefore clarify their prosodic properties.

3 Conclusions

As discussed in Chapter 1, this dissertation investigates the properties of French *wh*-in-situ questions from two angles, both of which relate to context: information structure and the distinction between echo and information seeking questions. In this chapter, I provided background information on these notions and motivated certain aspects of the approach adopted in this dissertation.

While it is often assumed that the *wh*-phrase equals the focus in *wh*-questions, irrespective of the preceding context, I re-examined the arguments for this view, and concluded that none of them are clear arguments against the assumptions put forward in Chapter 1. Following Jacobs (1984; 1991), Beyssade (2006) and Eckardt (2007), I argued that in certain languages, the focus in *wh*-questions may differ depending on the context, as in declaratives. Based on the behaviour of *wh*-fronting questions, one of these languages is French (Beyssade 2006; Beyssade et al. 2007).

The chapter specified the notions of focus and givenness I will use, as well as the concept of contextual salience, on which focus and in particular givenness rely. Regarding contextual salience, I proposed a refinement of Büring's (2016) concept, suggesting that it should be treated as a subjective notion. This accounts for the additional role of world knowledge and beliefs in focus and givenness. I show in Chapter 4 that focus affects the prosody of French *wh*-in-situ questions and explains an important aspect of the observed data variation. Givenness will play an important role in Chapters 5 and 6, where I show that this notion is crucial for our understanding of the data variation regarding several properties of French *wh*-in-situ questions, such as intervention effects.

In addition, although French *wh*-in-situ questions may be string-identical to echo questions, they exhibit differences regarding their syntactic, semantico-pragmatic and prosodic properties, that is, in all components of the grammar. In this dissertation, I will therefore explicitly distinguish and compare these two question types.

Together with Chapter 2, this chapter forms the background to the rest of the dissertation. In what follows, I investigate the prosody of French *wh*-in-situ questions (Chapter 4) and the occurrence of intervention effects (Chapter 5), before arguing that French has in fact two different mechanisms to interpret (non-echoic) *wh*-in-situ (Chapter 6).

4 A role for context: prosody[25]

1 Introduction

As I discussed in Chapter 2, one of the areas in which the data regarding French *wh*-in-situ questions are not yet clear is their prosody. I target this issue in the current chapter. In Chapter 3, I discussed two factors that may affect the prosody of these questions, both of which are connected to context. They are the information structure of the sentence and the distinction between echo and information seeking questions. In this chapter, I investigate whether these two factors affect the prosody of French *wh*-in-situ questions, and if so, how.

In the first place, the context in which a sentence is uttered affects its information structure, which may in turn affect its prosody. Even though there are languages that mark the *wh*-phrase as the focus of a *wh*-question, I laid out in Chapter 3 that this is not the case for all languages. Based on the behaviour of *wh*-fronting questions, French falls in this latter category of language (Beyssade 2006; Beyssade et al. 2007).

In the second place, French *wh*-in situ questions may be string-identical to echo questions. As was shown in Chapter 3, an echo question 'echoes' the preceding utterance and can therefore only be uttered in a particular context. Although echo and information seeking questions can be string-identical, they display different prosodic properties in several languages for which this has been investigated. It is as yet unclear whether they also differ prosodically in French.

In this chapter, I report on a production experiment that investigated the influence of these two factors relating to context on the prosody of

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[25] This chapter corresponds roughly to a paper that has been published as:
Glasbergen-Plas, Aliza, Stella Gryllia & Jenny Doetjes. 2021. The prosody of French *wh*-in-situ questions: Echo vs. non-echo. *Journal of Linguistics* 57(3): 569-603.

French *wh*-in-situ questions. The research question, which is subdivided into three sub-questions, is the following (1).

(1) *Research question*
Does the context in which a French *wh*-in-situ question is uttered influence its prosody, and if so, how?

    A. Is information structure reflected in the prosody?
    B. Is the distinction between echo and information seeking questions reflected in the prosody?
    C. What prosodic properties are unaffected by the contextual factors in A. and B.?

As I mentioned in Chapter 3, two main types of echo questions are commonly distinguished: those expressing auditory failure and those expressing surprise. I also mentioned that the emotion of surprise itself may affect the prosody of speech utterances. To avoid this confound, the experiment reported in this chapter focuses on echo questions expressing auditory failure. The term 'echo question' refers in the chapter to this particular type, unless specified otherwise.

The chapter offers prosodic descriptions of French *wh*-in-situ questions and demonstrates that the context in which such questions are uttered affects their prosody. Both differences in information structure and the distinction between echo and information seeking questions are reflected. The chapter also adds to and confirms claims regarding focus marking in French. Furthermore, it shows that the focus in *wh*-interrogatives may differ depending on the context. The chapter also describes the prosodic properties of French echo questions and shows that these differ from those of information seeking questions, even if the information structure of the questions is the same.

The structure is as follows. In Section 2, I provide the necessary background information. Section 3 presents the experimental design of the production experiment, for which I developed the elicitation paradigm 'Scripted Simulated Dialogue'. Using this paradigm, the context preceding a French *wh*-in-situ question was manipulated in order to elicit a particular type of question (echo or information seeking) and a

particular information structure in information seeking questions. Section 4 presents the results of the experiment. Section 5 provides discussion of the findings and Section 6 concludes the chapter.

2 Background

Chapter 3 discussed the notions of focus and givenness I employ in the dissertation and provided background information on echo questions. As further background to the production experiment, I discuss here the prosodic correlates of information structure in French (Section 2.1) and the prosodic properties of French echo as compared to information seeking questions (Section 2.2).

2.1 Prosodic correlates of information structure in French

In languages like English, focus is marked by the presence of the nuclear pitch accent (see also Chapter 3) (Pierrehumbert 1980; Pierrehumbert & Hirschberg 1990; Selkirk 1984a); for French, this is less clear. As French has no lexically stressed syllables to which a pitch accent may be assigned, the notion of a pitch accent is a complicated one. In French, the right edge of a focus is preferably aligned with (i.e. situated at) the right edge of a prosodic constituent and is marked by a tone (2) (Beyssade et al. 2004a; 2004b; Clech-Darbon et al. 1999; Delais-Roussarie et al. 2015; Féry 2001; 2013; Hamlaoui 2008) .

(2) [[... focus]$_{\text{TONE}}$ ...]

I will assume that this is the boundary tone associated with the right edge of the Intonation Phrase, the prosodic constituent with which the focus is aligned (Beyssade et al. 2004b; Féry 2001; 2013).[26]

The tone at the right edge of a focus tends to be low (L) in declaratives and high (H) in interrogatives, reflecting the illocutionary force of the

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[26] Alternatively, one could assume that the prosodic boundary determines the position of the nuclear pitch accent which in turn is responsible for focus marking.

utterance (Beyssade et al. 2004b; Clech-Darbon et al. 1999; Delais-Roussarie et al. 2004; Delais-Roussarie et al. 2015; Doetjes et al. 2004; Martin 1981). In broad focus utterances and sentences in which a narrow focus occurs sentence-finally, the tone is located at the end of the utterance (3).

(3) *Broad focus or focus at end of utterance*
    a. Declarative
       [...   focus]$_{L\%}$

    b. Interrogative
       [...   focus]$_{H\%}$

In other narrow focus utterances, the tone usually occurs twice, both at the end of the focus and at the end of the utterance. This phenomenon, which is visualised in (4), is referred to as 'tone copying' (Martin 1981).

(4) *Tone copying*
    a. Declarative
       [[...   focus]$_{L\%}$ ...   ]$_{L\%}$
                       └ COPYING ┘

    b. Interrogative
       [[...   focus]$_{H\%}$ ...   ]$_{H\%}$
                       └ COPYING ┘

Specifically, Martin claims that the F0 minimum (in declaratives) or maximum (in interrogatives) of the final syllable of the focus is copied to the final syllable of the utterance. This leads to two syllables that are very similar in pitch.

When a given constituent follows the focus (5), it may be compressed (Dohen & Lœvenbruck 2004; Féry 2001; Jun & Fougeron 2000).

(5) [[...   focus]$_{H\%}$ [given post-focus]   ]$_{H\%}$ (interrogative)

The prosodic correlates of this are a lower F0 and a shorter duration (Destruel & Féry 2015). However, unlike in the Germanic languages where post-focal material is standardly deaccented, such material is not always compressed in French. In contrast, post-focal givenness compression seems to occur mainly in material that forms its own (maximal) phonological phrase (Destruel & Féry 2015; Féry 2014; Hamlaoui et al. 2012). In addition, there may be some genuine optionality as to its occurrence, i.e. more so than in the Germanic languages (Féry 2014; see also Beyssade et al. 2004b).

Regarding the area preceding the focus, it is not yet clear whether French marks given material there as such (6).

(6) [[[given pre-focus]   focus]$_{H\%}$ ...]$_{H\%}$ (interrogative)

Some authors have observed a compression of the pitch in this area (Dohen & Lœvenbruck 2004; Jun & Fougeron 2000; Touati 1987) and a reduced amplitude (Jun & Fougeron 2000). In contrast, Beyssade et al. (2004b) state that there is no pitch compression in the pre-focus domain.

Only a few previous authors discussed focus marking in French *wh*-in-situ questions. First, Mathieu (2016) relates known prosodic correlates of focus marking to the prosody associated with an in-situ *wh*-phrase. As I explained in Chapter 3, it is a common assumption that in *wh*-questions, the *wh*-phrase is the focus; this is also Mathieu's assumption. He notes that there is a prosodic boundary between an in-situ *wh*-phrase and any subsequent material (see also Chapter 2). Under the assumption that the *wh*-phrase is the focus, he interprets this as a correlate of focus marking, cf. (2) above. Second, Hamlaoui (2011) claims that the focus structure of a *wh*-question is related to the difference between *wh*-in-situ and *wh*-fronting in French (cf. Mathieu 2002: 124-133). According to her, *wh*-fronted questions have broad focus, while *wh*-in-situ questions standardly display a narrow focus on the *wh*-phrase. Like Mathieu's (2016) proposal, this predicts that there is only one focus structure possible for *wh*-in situ questions, which should lead to uniform prosody of information seeking *wh*-in situ questions. Finally, Di Cristo (2016) does allow for the possibility of different focus structures in French *wh*-in-situ questions. His approach

to focus in *wh*-questions is similar to my own. However, he states that the right edge of an in-situ *wh*-phrase is marked by an accent in all cases. Hence, he seems to suggest that the difference between broad and narrow focus is not prosodically marked. Note however that in the examples he discusses, the *wh*-phrase is situated at the end of the sentence. This means that the right edge of the focus co-occurs with the right edge of the sentence and tone copying cannot apply.

2.2   French echo versus information seeking questions

Regarding the distinction between echo and *wh*-in-situ information seeking questions, it is as yet unclear whether these two question types are prosodically distinct in French, and if so, how.

Most of the debate surrounding the prosody of *wh*-in-situ information seeking questions has centred on the question whether they obligatorily end in a large rise (i.e. a rise with a large pitch excursion). This debate was described in Chapter 2. A second controversial issue is whether they exhibit an accent on the *wh*-word. Gryllia et al. (2016) systematically found an emphatic accent in questions uttered without context (cf. Engdahl 2006; Hamlaoui 2011; Mathieu 2002; Wunderli 1983; Zubizarreta 1998). Yet according to Baunaz and Patin (2011), the *wh*-phrase does not bear any accent when the question is uttered in an out of the blue context (cf. Baunaz 2016; Wunderli 1982; Wunderli & Braselmann 1980).

The prosody of French echo questions has not yet been investigated in much detail. Most descriptions in the literature are very brief. Some of them describe echo questions as displaying an overall higher pitch than information seeking questions (Boeckx 1999; Di Cristo 1998). Most suggest that they display a large sentence-final rise (Adli 2006; Boeckx 1999; Déprez et al. 2013; Di Cristo 1998; Di Cristo 2016; Engdahl 2006; Mathieu 2002; Mathieu 2016). Some mention a prominent accent on the *wh*-word (Chang 1997: 17; Engdahl 2006; Mathieu 2002). According to Engdahl (2006), the *wh*-word may also be lengthened.

Déprez et al. (2013) investigated the prosody of echo questions as compared to (*wh*-in-situ) information seeking questions experimentally, but focused exclusively on the final part of the utterance. Their study

offers some first evidence to suggest that the final rise in echo questions may be present more consistently and may display a somewhat larger pitch excursion. However, the methodology of the study does not allow for a statistical comparison of the question types, nor for a mapping of the F0 (i.e. pitch) movements to individual syllables.

In short, while the prosodic properties of both question types are not yet clear, a large sentence-final rise and an accent on the *wh*-word have been claimed for both. Mathieu (2002: 58), who claims that there is no large sentence-final rise in information seeking questions, even states that if such a rise were present, it would be very hard to distinguish information seeking questions from echo questions. Hence, in order to clarify the prosodic properties of information seeking questions, it is essential to distinguish explicitly between the two question types and to find out whether they differ. This also provides the first in-depth description of the prosody of French echo questions.

3   Experimental design

I now turn to the experimental design. To answer the research question in (1) above, I set up three conditions (7).

(7) *Conditions*
 A. Echo question (expressing auditory failure)
 B. Information seeking question with broad focus
 C. Information seeking question with narrow focus

As I explained in Chapter 3, echo questions (Condition A) always have a narrow focus on the *wh*-word, as the non-*wh*-portion of the question is 'echoed' from the previous utterance. The focus structure in broad focus questions (Condition B) is therefore maximally different from the focus structure in echo questions. As a third condition, I included information seeking questions with an information structure as in echo questions, i.e. a narrow focus on the *wh*-word (Condition C). Consequently, if information structure is marked prosodically in French *wh*-in-situ questions (RQ A. in (1)), information seeking questions with broad focus

(Condition B) should differ from both echo questions (Condition A) and information seeking questions with a narrow focus on the wh-word (Condition C) as in echo questions. In addition, if the distinction between French *wh*-in-situ echo and information seeking questions is reflected in the prosody (RQ B. in (1)), echo questions (Condition A) should differ from both types of information seeking questions (Conditions B and C). An advantage of this experimental set-up is that it is possible to separate the prosody associated with the discourse-semantic function of echo questions from the prosody associated with their specific information structure.

I elaborate on the properties of these three conditions in Section 3.2. The conditions were created by manipulating the context preceding the target sentences. I start by laying out the elicitation paradigm designed to accomplish this context manipulation (Section 3.1). Subsequently, the constructed materials are discussed, which include both items and contexts (Section 3.2). I then lay out the recording procedure (Section 3.3), the participants (Section 3.4) and the acoustic (Section 3.5) and statistical analyses (Section 3.6).

3.1   Elicitation paradigm: Scripted Simulated Dialogue

To elicit the three conditions, I designed a paradigm that I will refer to as Scripted Simulated Dialogue. This elicitation paradigm simulates a series of short dialogues, in which the participant's interlocutor is a recorded voice. The participant's speech turns are scripted: s/he reads them from a computer screen. Every dialogue has one target sentence or filler embedded in it, always at the same position in the dialogue. As this position is almost at the end of the dialogue, the preceding discourse can be used to manipulate a particular reading of the sentence. The participant does not know that the dialogues contain a particular target sentence.

Every dialogue is preceded by a description of the conversational setting, which contains information about who the interlocutors are and where the conversation takes place. The context manipulation thus has two elements: the description of the conversational setting and the

preceding speech turns. An example of a dialogue is presented in Figure 1. Speaker A represents the participant and Speaker B the 'interlocutor'. The target sentence is underlined (it was not in the actual experiment).

[Conversational setting]   Tu discutes avec Ernestine, ta femme. Elle part quelques jours en voyage d'affaires et rentrera mercredi, juste à temps pour ton anniversaire. Tu lui dis :

A *Bon voyage ma chérie. Tu as bien ton passeport ?*
B *Oui merci. Ah voilà mon taxi.*
A *Tu m'envoies un texto quand tu es arrivée à Londres ?*
B *Oui, oui bien sûr. A mercredi ; pour ta dernière soirée de trentenaire !*
A *Moque-toi ; dans six mois c'est ton tour. D'ailleurs tu ne m'as pas dit.*
   Tu as réservé quel resto pour jeudi soir ?
B *Surprise...*

[Conversational setting]   You're talking to Ernestine, your wife. She's going on a business trip for a few days and will be back on Wednesday, just in time for your birthday. You say:

A *Have a good trip love. Have you got your passport?*
B *Yes thanks. Oh that's my taxi.*
A *Will you send me a text when you've arrived in London?*
B *Yes, sure, I will. On Wednesday; on your last evening in your thirties!*
A *Careful with the teasing; in six months it's your turn.*
   By the way, you didn't tell me.
   Which restaurant did you book for Thursday evening?
B *Surprise...*

Figure 1. Example of a Scripted Simulated Dialogue (used in Condition B)
with translation underneath

Following each dialogue, the participant receives a question about the information supplied by the recorded 'interlocutor', as in (8).

(8) Ernestine rentre de voyage…
    1. mercredi
    2. samedi
    3. vendredi

    Ernestine is coming back from her trip on…
    1. Wednesday
    2. Saturday
    3. Friday

The purpose of this is to direct the participants' attention to the content of the dialogue, rather than the form of the utterances. The elicitation paradigm is discussed further in Section 4.2 of Chapter 7.

3.2   Materials

Twelve target stimuli were created. Each of these was presented in three conditions, yielding a total of thirty-six target utterances. The stimuli had twelve syllables. An example is shown in (9), along with its translation as an echo and an information seeking question.

(9) Tu   as   réservé quel   resto   pour jeudi   soir ?
    You   have booked which restaurant for   Thursday evening?
    'You booked which restaurant for Thursday evening?'   [Echo]
    'Which restaurant did you book for Thursday evening?'   [Inform. s.]

All stimuli contained the pronoun *tu* 'you (informal)' as a subject (to avoid differences in the information status of the subject), followed by a verb composed of the auxiliary *as* 'has' and a three-syllable past participle. Next came the *wh*-phrase, which was the direct object of the utterance. It contained the *wh*-word *quel* 'which' and a disyllabic noun. I chose to use complex *wh*-phrases (rather than, for instance, *quoi* 'what') to keep the prosody associated with the *wh*-word distinct from the prosodic correlates of a possible phrase boundary at the end of the *wh*-phrase. A PP, composed of a one-syllable preposition and a three-syllable DP, followed the *wh*-phrase. Its purpose was to separate the prosody associated with

the *wh*-phrase from the prosody associated with the end of the utterance. Sonorants were used as much as possible to facilitate Fo measurements.

The target sentences were intermingled with thirty-six fillers. Twelve of these were declaratives that resembled the discourse-pragmatic function of echo questions, such as *Désolé, je n'ai pas bien entendu* 'Sorry, I didn't hear what you said'. The remaining twenty-four fillers were sentences that fitted naturally in the context and that were not *wh*-in-situ questions.

Each stimulus or filler was embedded in a dialogue as in Figure 1 above. The dialogues always had six speech turns, three for the participant and three for the recorded 'interlocutor'. The stimulus or filler was part of the participant's last speech turn, with the 'interlocutor's' last speech turn following it. The dialogues, which were written and checked by three native speakers of French, were constructed to be natural and informal.[27] The voice that represented the 'interlocutor' was a female native speaker of French, while the description of the conversational setting that preceded a dialogue was read by a male speaker (to make the distinction clear). Both were recorded in the Leiden University phonetics lab.

Except for the dialogues containing fillers, each dialogue had certain properties that were intended to trigger either an echo question expressing auditory failure (Condition A), an information seeking question with broad focus (Condition B) or an information seeking question with an information structure as in echo questions, i.e. a narrow focus on the *wh*-word (Condition C). I discuss each of these in turn.

Figure 2 presents an example of a dialogue used in Condition A (echo question). In this example, pink noise (a deep, even noise) covers the word *Monette* (represented as strikethrough text). This causes a need to ask for repetition. (Recall also that after every dialogue, a participant is asked a question about the content of the dialogue.) An episode of pink noise was also present in all other contexts (pertaining to the other

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[27] I would like to thank Yannick Gloanec, Marion Bracq and in particular Sylvie Cuchet.

conditions and the fillers), but in a position where it would not hinder the conversation, for instance on the final syllable of a long word.

[Conversational setting] Tu es directeur d'une petite école primaire. La semaine prochaine, c'est la rentrée des élèves. Mais, demain, mercredi, c'est la pré-rentrée pour les maîtres et maîtresses. Tu es à l'école avec Axelle, ta secrétaire, pour organiser les dernières petites choses. Tu dis :

A *Et c'est reparti pour un an !*
B *Oui et avec deux classes et deux nouvelles maîtresses de plus.*
A *C'est bien qu'on ait prévu ce petit dîner*
   pour faire plus ample connaissance.
B *Oui, d'ailleurs je voulais te dire, pour qu'on soit au calme pour parler,*
   j'ai réservé le resto « chez ~~Monette~~ » pour jeudi soir.
A <u>*Tu as réservé quel resto pour jeudi soir ?*</u>
B *Chez Monette, dans la petite salle du fond, on devrait être tranquilles.*

[Conversational setting] You are the principal of a small primary school. Next week, it's the start of the new school year. But tomorrow, Wednesday, is the first day for the teachers. You are at the school together with Axelle, your secretary, to organize the last things. You say:

A *So we start again!*
B *Yes, and with two new classes and two new teachers.*
A *It was a good idea to have this small dinner party*
   to get to know each other.
B *Yes, by the way, I wanted to tell you. In order to have a quiet place*
   to talk, I booked the restaurant Chez ~~Monette~~ for Thursday evening.'
A <u>*You booked which restaurant for Thursday evening?*</u>
B *Chez Monette. They have a back room that's usually quiet.*

Figure 2. Scripted Simulated Dialogue used in Condition A (echo question)
with translation underneath

Condition B, of which Figure 1 above is an example, was designed to elicit information seeking *wh*-in-situ questions with broad focus. Although the target sentence was preceded by context, it provided little information about the content of the question. Whereas the context was consistent with the existential implicature of *wh*-questions (i.e. the speaker expected there to be an answer), no part of the content of the question would be mentioned in the preceding context. Consequently, the *wh*-in-situ question formed a rather sudden departure from the topic of the preceding conversation. To keep the discourse natural, the context signaled this change in topic, for instance by a 'topic change marker' (Fraser 1996; 1999), like *d'ailleurs tu ne m'as pas dit* 'by the way, you didn't tell me' in Figure 1.

In Condition C, the context was designed to force a reading as an information seeking question with the same information structure as an echo question, i.e. a narrow focus on the *wh*-word.[28] To this end, the context would mention all elements of the content of the question except the *wh*-word, i.e. 'booking a restaurant for Thursday evening' in Figure 3 below. In order to create this type of context, while keeping the flow of the discourse natural, I used *wh*-in-situ questions with a contrastive topic, as in Engdahl (2006: 100). Subject pronouns in French are clitics and cannot be contrastively stressed (Kayne 1975). To express contrastive topichood, French uses another, 'strong' pronoun, which may be coreferential with a clitic (Lambrecht 1994: 115-116). I used *et toi* 'and you', which was taken up by the resumptive clitic *tu* 'you' in the clause proper. Consequenly, the sentence following the contrastive topic *et toi* 'and you' was string-identical to the target stimuli used in Conditions A and B.

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[28] I discuss the information structure of echo questions further in Chapters 5 and 6, where I will show that in addition to their narrow focus on the *wh*-word, they are entirely 'given', which I will call 'Maximally Given'. As the context in Condition C was designed to elicit information seeking questions with the same information structure as echo questions, these questions are also Maximally Given.

[Conversational setting] Tu es violoniste dans un orchestre amateur. Tu es en séance de répétition. Pendant que les flûtistes répètent un passage délicat, tu parles avec ta voisine Eléonore. Tu lui dis :

A *Tu pars en déplacement cette semaine ?*
B *Non pour une fois, je suis là toute la semaine. Ça tombe bien,*
  c'est la remise de diplôme de ma fille jeudi.
  Du coup, nous allons en famille au restaurant.
A *C'est marrant, Fleur m'a raconté la même chose.*
B *Oui, elle m'a dit qu'elle a réservé au Pavillon pour jeudi soir.*
A *Et toi, <u>tu as réservé quel resto pour jeudi soir ?</u>*
B *Le Bord du Lac.*

[Conversational setting] You play the violin in an amateur orchestra. During a rehearsal, while the flutists are practicing a particularly difficult passage, you talk to Eléonore, who is sitting next to you. You say:

A *Are you going on a trip this week?*
B *No, just this once I'm going to be here all week. Good timing:*
  it's my daughter's graduation ceremony on Thursday,
  so we're going out for a family dinner.
A *Oh that's funny, Fleur said just the same thing.*
B *Yes, she told me she'd booked the restaurant Pavillon*
  for Thursday evening.
A *And you, <u>which restaurant did you book for Thursday evening?</u>*
B *Le Bord du Lac.*

Figure 3. Scripted Simulated Dialogue used in Condition C (narrow focus)
with translation underneath

The complete experimental materials can be found in Appendix A.

3.3 Recording procedure

Recordings took place in a soundproof booth at Pôle Audiovisuel et Multimédia (PAM) at the University of Nantes.[29] Participants were seated in front of a computer screen at an approximate distance of 50 cm. They wore AKG K 44 perception headphones. The speech was recorded onto digital audio tape (DAT) at a sampling rate of 44.1 kHz, using a TASCAM DR-100 recorder and a TRAM TR50 clip-on microphone.

Participants were informed that they would be taking part in a series of short dialogues with a recorded 'interlocutor' that they would hear through their headphones and that their side of the dialogue would appear on the screen in front of them. They were encouraged to project themselves into the situation represented by the dialogue, speaking naturally, 'as if they were just talking to someone' and to repeat their utterance in case of a lapse. These instructions were presented visually on the computer screen and repeated orally at the beginning of the experiment. After that, the experimenter did not intervene.

Participants pressed a key once they were ready to start the experiment. This would prompt the recording of the first conversational setting to be played through the headphones (in a male voice), while the screen was blank. Every conversational setting ended with *Tu (lui) dis :* 'You say (to her/him):'. Then the participant's first speech turn would appear on the screen. The participant would utter his/her speech turn, after which s/he would press a key for the 'interlocutor's' speech turn to start playing through the headphones (in a female voice) while the screen was blank again. Then the participant's next speech turn would appear on the screen. This process would be repeated until the participant had uttered the question that formed the target sentence in his/her third speech turn (or a filler) and received an answer in the 'interlocutor's' third and last speech turn. The alternation of speaking, then pressing a key and listening to the 'interlocutor' very soon became an automatic process.

After the last speech turn of every dialogue (item or filler), a multiple choice sentence completion task as in (8) above would appear on the screen, asking about information supplied by the 'interlocutor'. The participant would answer the question by pressing 1, 2 or 3. Feedback on the answer would appear on the screen: it was usually correct, since the task was designed to be easy if the participant paid attention to the interlocutor's speech turns. The participant would then press a key to move on to the next trial. The whole paradigm was programmed in E-Prime (Psychology Software Tools Inc. 2012).

The dialogues were randomized and presented to participants in three blocks, with breaks in between. Three practice trials were used for familiarisation purposes. The experiment lasted approximately an hour.

3.4   Participants

Twenty graduate and postgraduate students at the University of Nantes, monolingual native speakers of French, were reimbursed to participate in the experiment (12 female and 7 male, age range 18-29 years old). None of them reported any speech or hearing disorders.

3.5   Acoustic analysis

A total of 720 utterances were obtained. After inspection of the data for speech errors, hesitations or unnatural pausing, 98 utterances were excluded from further analysis. The remaining 622 utterances were segmented into phones, syllables and words using EasyAlign (Goldman 2011). The segmental boundaries were then checked and adjusted manually where necessary.[30]

The utterances were inspected again to uncover any patterns in the data, such as the occurrence of different prosodic tunes within the data elicited in one condition. I marked the number of occurrences of each prosodic tune.

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[30] I thank Thomas Jansen for his valuable assistance.

Based on this inspection, I selected the utterances for the statistical analyses. I followed the reasoning that if a) a prosodic tune occurred in the majority of cases elicited in a particular condition and b) none of the other tunes came close to its frequency, then this prosodic tune might be considered to be the characteristic prosodic tune of utterances elicited in that condition. I included the items uttered with these characteristic prosodic tunes in the statistical analyses, with the exception of cases that exhibited the characteristic prosodic tune but with a variation (see also Section 4.1). This was done to achieve a sample that was as homogeneous as possible.

Based on the literature regarding the prosody of French *wh*-in-situ questions, I selected the following seven F0 measurement points to obtain an overview of the entire utterance. They are visualised in Figure 4 on the next page.

1. AUXILIARY LOW
   The lowest F0 point of the second person auxiliary *as* 'have'.
   (This point, rather than the first syllable *tu* 'you', was selected to capture the F0 in the beginning of the utterance, to avoid any influence from the preceding contrastive topic in Condition C.)

2. PARTICIPLE HIGH
   The highest F0 point of the final syllable of the participle.

3. WH-WORD HIGH
   The highest F0 point of the *wh*-word *quel* 'which'.

4. FINAL WH-PHRASE HIGH
   The highest F0 point of the final syllable of the *wh*-phrase.

5. ANTEPENULTIMATE LOW
   The lowest F0 point of the utterance's antepenultimate syllable.

6. PENULTIMATE LOW
   The lowest F0 point of the utterance's penultimate syllable.

7. ULTIMATE HIGH
   The highest F0 point of the final syllable of the utterance.
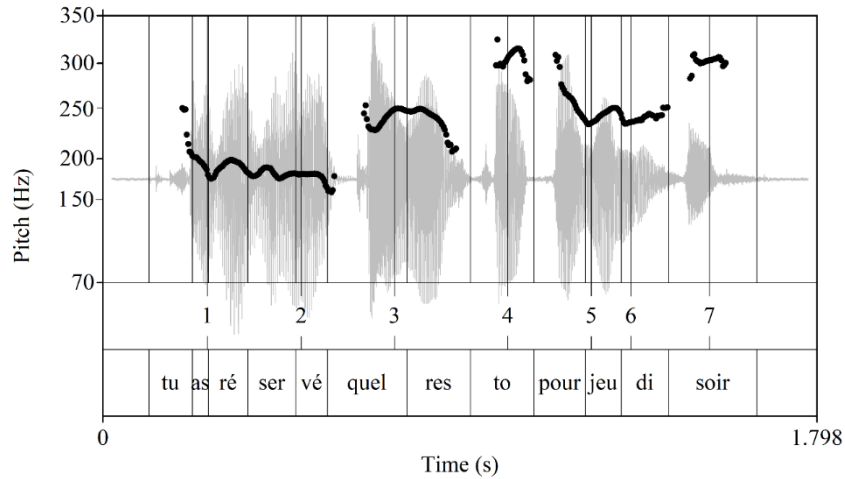
Figure 4. Waveform and F0 tune of the question *Tu as réservé quel resto pour jeudi soir ?* 'You booked which restaurant for Thursday evening?', elicited in Condition A (echo question), together with a textgrid indicating the seven measurement points

I also obtained the following F0 measurements, in order to gain insight into the pitch range of the utterances, the presence of tone copying and the presence of a sentence-final rise respectively.

A. PITCH RANGE, POINT 4 – POINT 1
The difference between the F0 maximum on the final syllable of the *wh*-phrase (a high point in the utterance) and the F0 minimum of the auxiliary (a low point in the utterance).

B. TONE COPYING, POINT 4 – POINT 7
The difference between the F0 maximum at the final syllable of the *wh*-phrase (the focus in narrow focus questions) and the F0 maximum at the final syllable of the utterance.

C. SENTENCE-FINAL PITCH MOVEMENT, POINT 7 – POINT 6

The difference between the F0 maximum at the final syllable of the utterance and the F0 minimum of the penultimate syllable.[31]

The F0 values were extracted with the help of a Praat script (Boersma & Weenink 2017), which took the values from the voiced part of the respective syllables. As rises in French have been shown to continue onto a sonorant syllable coda, and even (in rare cases) on a voiced obstruent coda (Welby & Lœvenbruck 2005), I included voiced consonants in the analysis. The F0 values in Hertz were subsequently converted into semitones (st) to reduce variation. (I used the formulas st = 12 log2 (Hz/100) for female speakers and st = 12 log2 (Hz/50) for male speakers respectively, following Li and Chen (2012).) In addition, I extracted the duration and the mean intensity in decibel (dB) of every syllable, using two more Praat scripts.

3.6 Statistical analysis

I ran a series of linear mixed-effects models using the *lmer* function of the *lme4* package (Bates et al. 2015) in R (R Core Team 2017). P-values were obtained using the package *lmerTest* (Kuznetsova et al. 2017). Specifically, I ran a model with the relevant measurement as the dependent variable, question type as a fixed factor, and intercepts of items and participants as random factors for every measurement. To obtain all relevant comparisons I ran the analyses for each reference category (Echo, Broad focus, Narrow focus). The results of the analyses can be found in Appendix B.

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[31] The sentence-final pitch movement tends to start at the penultimate syllable of the utterance (Di Cristo 2016).

4 Results

I will now present the results of the experiment. First I provide descriptions of the three tunes that turned out to be characteristic of the utterances elicited in the respective conditions (Section 4.1). The remainder of the section is devoted to the comparisons between these three tunes with respect to F0 (Section 4.2) and duration and intensity (Section 4.3), after which I provide a summary of the results (Section 4.4). In short, the main results are the following. The utterances elicited in the three conditions differ from each other regarding F0 and duration, though not greatly regarding intensity. The utterances elicited in Condition B (information seeking questions with broad focus) differ from those in Condition A (echo questions) and Condition C (information seeking questions with narrow focus), indicating that information structure is reflected in the prosody (RQ A. in (1)). The utterances elicited in Condition A (echo questions) also differ from those in Conditions B and C (information seeking questions with broad and narrow focus), indicating that the distinction between echo and information seeking questions is reflected in the prosody (RQ B. in (1)). There are also some prosodic features that remain unaffected by these contextual factors (RQ C. in (1)).

4.1   Descriptions of the three characteristic prosodic tunes

Three prosodic tunes were frequently attested in the data; each of these tunes occurred in all three conditions. However, in every condition there was one tune that a) was attested much more frequently than any other tune and b) occurred only infrequently in the other conditions. I therefore regarded this tune as the 'characteristic tune' (ch.t.) of the respective condition. As mentioned, I used the utterances pronounced with the characteristic tunes of the conditions as input for the analyses. The distribution of the different prosodic tunes is illustrated in Table 1. For the sake of presentation, I will refer to the characteristic tunes of the three conditions as the 'Echo Tune', the 'Broad focus Tune' and the 'Narrow focus Tune'.

Table 1. The prosodic tunes and the frequencies with which they were attested in Conditions A, B and C. Shading marks the characteristic tune of each condition.

	CONDITION A	CONDITION B	CONDITION C
Ch.t. Condition A (echo question)	188 (87%)	6 (3%)	17 (9%)
Ch.t. Condition B (broad focus)	2 (1%)	146 (70%)	24 (12%)
Ch.t. Condition C (narrow focus)	13 (6%)	37 (18%)	137 (69%)
Other tune or unclassifiable	13 (6%)	19 (9%)	20 (10%)
Total number of cases	216 (100%)	208 (100%)	198 (100%)

I will now describe these three tunes. Figure 5 displays an example of an Echo Tune. In this tune, the Fo is quite low in the area of the utterance preceding the *wh*-phrase. There is a high point associated with the *wh*-word *quel* 'which'. The Fo rises to an even higher point associated with the final syllable of the *wh*-phrase; this peak can be high in the speaker's register. The Fo falls again on the PP, but not to the level of the beginning of the utterance: the Fo usually remains high. At the end of the utterance, the Fo rises to an extreme Fo level again, which is often similar to the Fo on the final syllable of the *wh*-phrase.
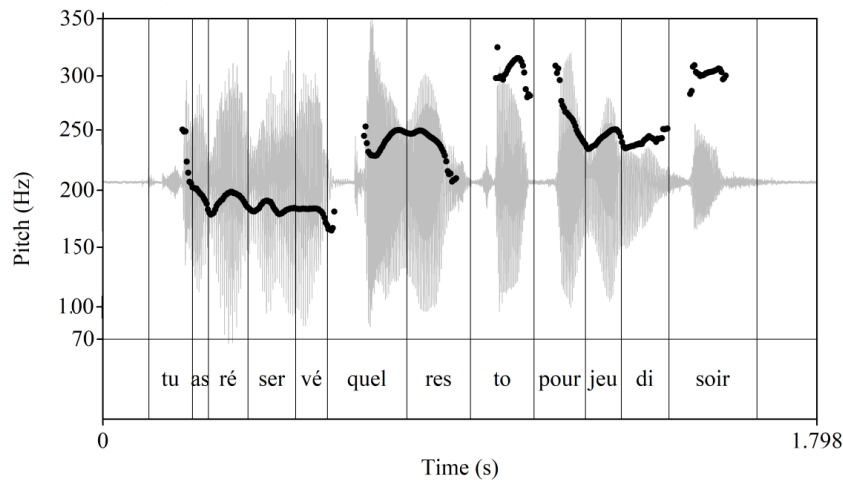
Figure 5. Waveform and Fo tune of the question *Tu as réservé quel resto pour jeudi soir ?*
'You booked which restaurant for Thursday evening?',
uttered with the Echo Tune by a female speaker

Figure 6 shows an example of a Broad focus Tune.[32] There is a high point associated with the *wh*-word *quel* 'which', as in the Echo Tune. Subsequently, there is a high point associated with the end of the *wh*-phrase, which varies in height. (The peak can be late, aligned with the preposition.) There is often an Fo fall between these two high points associated with the *wh*-phrase, but the Fo can also stay level, forming a

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[32] Note that this item was uttered by a male speaker, so its Fo is overall lower than that in Figures 5 and 7.

plateau over the whole *wh*-phrase. The F0 then falls on the PP, after which the sentence usually ends with a rise, which tends to be quite small. Note that the rise in the example in Figure 6 is rather large as compared to the average rise in utterances elicited in this condition.
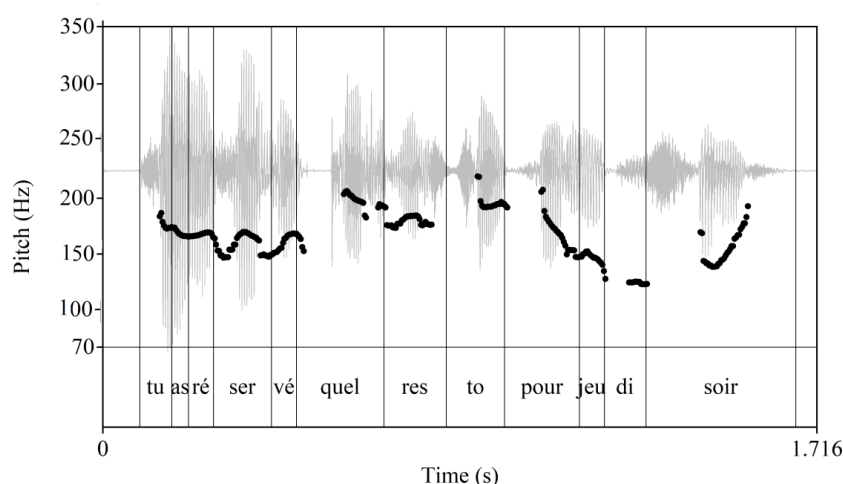
Figure 6. Waveform and F0 tune of the question *Tu as réservé quel resto pour jeudi soir ?* 'Which restaurant did you book for Thursday evening?' (lit. 'You have booked which restaurant for Thursday evening?'), uttered with the Broad focus Tune by a male speaker

Figure 7 displays an example of a Narrow focus Tune. The speaker is the same as the one that uttered the example of the Echo Tune in Figure 5. Recall that utterances elicited in Condition C (narrow focus) were preceded by the contrastive topic *et toi* 'and you' (see Section 3.2 for discussion). In the vast majority of cases, there is a high point associated with this contrastive topic (consistent with previous descriptions, Delais-Roussarie et al. 2004). Sometimes the contrastive topic is followed by a pause, with a subsequent pitch reset at the beginning of the utterance proper. When there is no pause (as in Figure 7), the F0 falls gradually from the high point of the contrastive topic. The fall then covers *tu* 'you' and often (part of) *as* 'have'. As in the Echo Tune, the rest of the area preceding the *wh*-phrase has low pitch. In contrast to both other tunes, there is either no high point associated with the *wh*-word, or a high point that is much lower. There is, however, a high point associated with the

last syllable of the *wh*-phrase. On the PP following the *wh*-phrase, the F0 falls, often to the level of the area preceding the *wh*-phrase.[33] At the end of the utterance there is an F0 rise, which often reaches a level that is similar to the high point at the end of the *wh*-phrase, like in the Echo Tune.
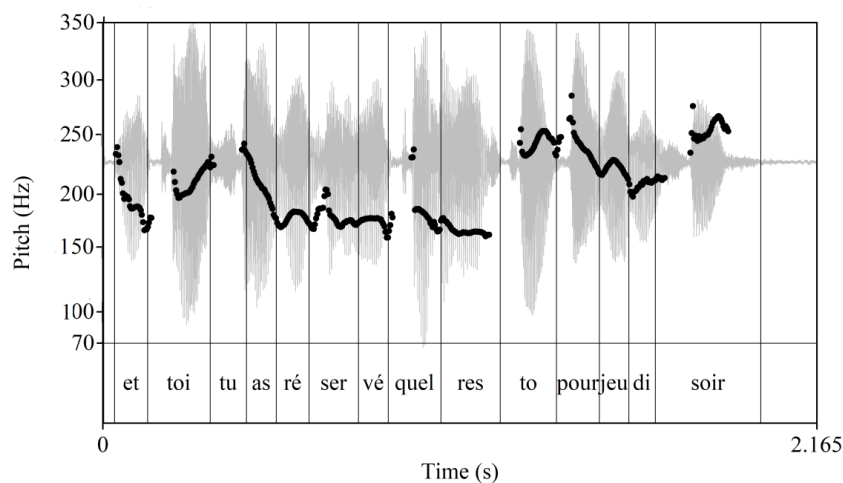
Figure 7. Waveform and F0 tune of the question *Et toi, tu as réservé quel resto pour jeudi soir ?* 'And you, which restaurant did you book for Thursday evening?' (lit. 'And you, you have booked which restaurant for Thursday evening?'), uttered with the Narrow focus Tune by a female speaker

These descriptions show that there are clear differences between the three tunes. Nevertheless, two features are present in all of them. Firstly, there is a high point associated with the end of the *wh*-phrase, followed by a fall on the PP, which I interpret as a prosodic boundary between the *wh*-phrase and the PP. Secondly, all three tunes end with at least a small

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[33] It is not the case that all features of the three characteristic tunes are clearly manifested in each individual item. For instance, in the example in Figure 7, the F0 of the PP does not fall to the level of the area preceding the *wh*-phrase, but stays relatively high. My descriptions here reflect the tonal movements that I observed in most cases. They are confirmed by the average differences in semitones and statistical comparisons reported in Sections 4.2 and 4.3. The descriptions are therefore more representative of the average prosodic features than the individual examples displayed in the figures.

sentence-final rise (which seems larger in the Echo Tune and the Narrow focus Tune than in the Broad focus Tune).

Note that in all three characteristic tunes, one or both of these features were absent in some cases.[34] I excluded the utterances with a variation from the statistical analyses to achieve a sample that was as homogeneous as possible. Hence, I conducted the analyses on 164 utterances exhibiting the Echo Tune in Condition A, 130 utterances exhibiting the Broad focus Tune in Condition B and 136 utterances exhibiting the Narrow focus Tune in Condition C.

4.2   Comparisons of the three characteristic tunes: F0

I now turn to comparisons between the three tunes regarding their F0, starting with a visualisation of the seven measurement points in Figure 8 on the next page. (Note that the lines in this figure connect separate measurement points and do not represent contours.) In what follows, I discuss the different parts of the sentence in turn. All reported differences in semitones (st) are significant; details of the statistical analyses can be found in Tables 1 and 2 of Appendix B.

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[34] Of the 211 occurrences of the Echo Tune in all three conditions, 180 (85%) exhibited the prototypical tune, 30 (13%) seemed to lack a fall on the PP and 1 (< 1%) lacked a sentence-final rise. The lack of a fall on the PP resulted in a high plateau over the post-focus given material, cf. Jun & Fougeron (2000).

Of the 172 occurrences of the Broad focus Tune in all three conditions, 149 (87%) exhibited the prototypical tune, 3 (2%) seemed to lack the high point at the end of the *wh*-phrase followed by a fall on the PP, 11 (6%) lacked a sentence-final rise and 9 (5%) seemed to lack both. The lack of a high point followed by a fall seemed to correlate with the absence of a prosodic boundary between the *wh*-phrase and the PP.

Of the 187 occurrences of the Narrow focus Tune in all three conditions, 179 (96%) exhibited the prototypical tune and 8 (4%) lacked a final rise (none seemed to lack a fall on the PP).
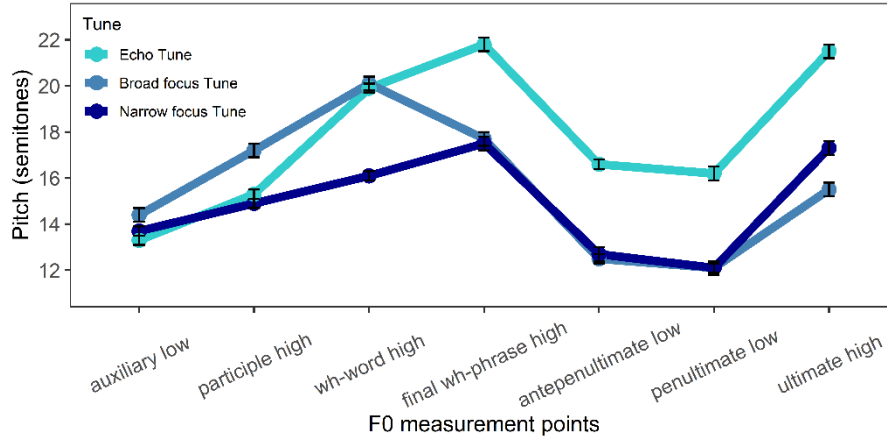
Figure 8. Average F0 at seven measurement points in the characteristic tunes of utterances elicited in Condition A (echo question), Condition B (broad focus) and Condition C (narrow focus), of the form *Tu as réservé quel resto pour jeudi soir* ? lit. 'You have booked which restaurant for Thursday evening?'

Preceding the *wh*-phrase
As shown in Figure 8, the Echo Tune and the Narrow focus Tune have lower pitch than the Broad focus Tune in the part of the utterance preceding the *wh*-phrase. At the participle ('participle high'), this difference is significant for both the Echo Tune [1.9 st] and the Narrow focus Tune [-2.3 st]. The F0 of the Echo Tune and the Narrow focus Tune does not differ in this part of the utterance. At the auxiliary ('auxiliary low'), the Echo Tune is also significantly lower than the Broad focus Tune [-1.1 st], but the Narrow focus Tune only marginally so [-0.7 st].

***Wh*-word *quel* 'which'**
At the *wh*-word *quel* 'which' ('*wh*-word high' in Figure 8), the F0 maximum in the Echo Tune and the Broad focus Tune are equal in height. However, consistent with the observation that there is no peak or a much lower one in the Narrow focus Tune (Section 4.1), the F0 maximum is significantly lower in that tune than in the other two [-4.0 st 'Broad focus Tune, -3.8 st Echo Tune].

Following the *wh*-phrase

From the final syllable of the *wh*-phrase onwards, the tonal movements in all tunes seem to be the same, but the F0 in the Echo Tune is elevated. The high point on the final syllable of the *wh*-phrase ('final *wh*-phrase high' in Figure 8) is much higher in the Echo Tune than in both other tunes [Broad focus Tune 4.1 st, Narrow focus Tune 4.3 st]. The F0 remains much higher: on the F0 minimum of the antepenultimate syllable ('antepenultimate low'), the F0 minimum of the penultimate syllable ('penultimate low') and the F0 maximum of the final syllable of the utterance ('ultimate high'). These F0 differences between the Echo Tune and the other two tunes are large: they range between 3.9 and 6 st and are highly significant.

The Narrow focus Tune and the Broad focus Tune behave similarly in this part of the utterance, with the exception of the final syllable. There, the Narrow focus Tune has significantly higher pitch than the Broad focus Tune [1.8 st].

I now turn to the difference in F0 between certain points in the utterance, which can still be found in Figure 8 above.

Pitch range

I first report on the pitch range, which was measured as the difference between the F0 maximum on the final syllable of the *wh*-phrase ('final *wh*-phrase high') and the F0 minimum at the auxiliary ('auxiliary low'). This pitch range is much larger in the Echo Tune [8.5 st] than in the Broad focus Tune [3.2 st] and the Narrow focus Tune [3.6 st]. The larger pitch range in the Echo Tune is mostly due to the high F0 from the final syllable of the *wh*-phrase onwards. It is exacerbated by the low F0 in the area preceding the *wh*-phrase. The pitch range does not differ significantly between the Narrow focus Tune and the Broad focus Tune.

Tone copying

Recall from Section 2.1 that a correlate of narrow focus in French is tone copying, which would result in very similar F0 values on the final syllable of the focus and the final syllable of the utterance. I therefore compared

the F0 maximum on the final syllable of the *wh*-phrase ('final *wh*-phrase high'), i.e. the focus in echo and narrow focus questions, and the F0 maximum on the final syllable of the utterance ('ultimate high'). Indeed, the F0 maximum of these syllables is extremely similar in the Echo Tune and the Narrow focus Tune. The average difference between them is 0.6 st (Echo Tune) and only 0.1 st (Narrow focus Tune) respectively. The difference is not particularly small in the Broad focus Tune: on average 2.5 st. The difference between the Echo Tune and the Broad focus Tune is significant, as well as the difference between the Narrow focus Tune and the Broad focus Tune. Yet, the Narrow focus Tune and the Echo Tune do not differ significantly.

The cause of the difference between the Narrow focus Tune and the Broad focus Tune is the higher F0 maximum on the final syllable of the utterance in the Narrow focus Tune ('ultimate high'). The F0 maximum on the final syllable of the *wh*-phrase ('final *wh*-phrase high') does not differ between these two tunes.

Sentence-final pitch movement

Finally, I measured the difference between the F0 maximum on the final syllable of the utterance ('ultimate high') and the F0 minimum of the penultimate syllable ('penultimate low') as an indication of the sentence-final pitch movement. This value is on average 3.4 st in the Broad focus Tune, 5.0 st in the Echo Tune and 5.3 st in the Narrow focus Tune. These values indicate the presence of a rise rather than a fall in all tunes. Still, the rise is significantly larger in both the Echo Tune and the Narrow focus Tune than in the Broad focus Tune, while it does not differ between the Echo Tune and the Narrow focus Tune. The larger rise in the Narrow focus Tune is again due to the higher F0 maximum on the final syllable of the utterance. The average F0 minimum of the penultimate syllable is the same in the Narrow focus Tune and the Broad focus Tune.

4.3   Comparisons of the three characteristic tunes: duration and intensity

In general, duration and intensity measurements were less informative than F0 regarding the differences between the three tunes. However, there are two observations to be made concerning duration. (The details of the statistics are reported in Tables 3 and 4 in Appendix B.)

Firstly, as is visualized in Figure 9, the *wh*-word *quel* 'which' is significantly longer in the Echo Tune (203 ms) than in both other tunes (177 and 175 ms). There is also some lengthening of the syllable preceding the *wh*-word, which was the final syllable of the participle, compared to the Broad focus Tune. (The *wh*-phrase as a whole also has longer duration in the Echo Tune, 36 ms longer than in the Broad focus Tune and 38 ms longer than in the Narrow focus Tune.)
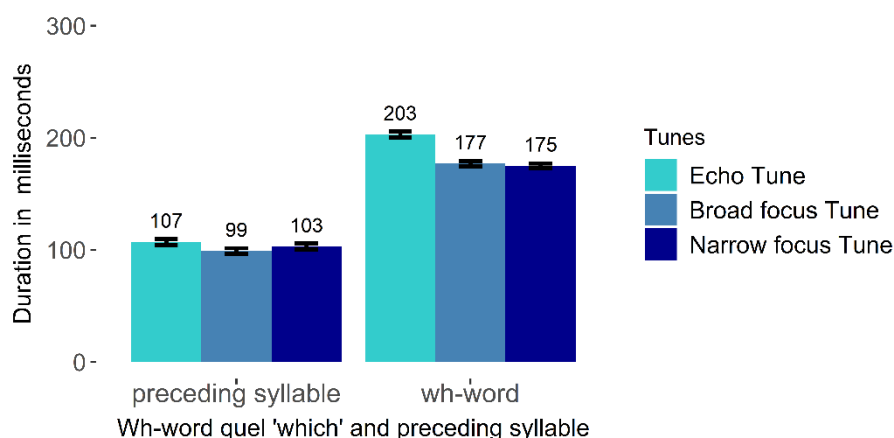
Figure 9. Average duration of the *wh*-word *quel* 'which' and the preceding syllable in the characteristic tunes of utterances elicited in Condition A (echo question), Condition B (broad focus) and Condition C (narrow focus), of the form *Tu as réservé quel resto pour jeudi soir* ? lit. 'You have booked which restaurant for Thursday evening?'

Secondly, as is shown in Figure 10, both the final and the penultimate syllables of the utterance are shortened in the Echo Tune. The final syllable of the utterance is also shortened in the Narrow focus Tune as compared to the Broad focus Tune. The Narrow focus Tune and the Echo Tune pattern together on this final syllable and do not differ significantly.
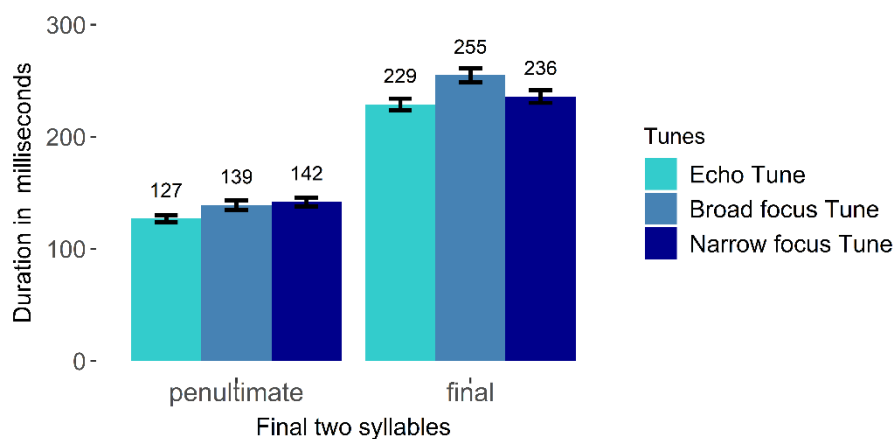
Figure 10. Average duration of the final two syllables of the utterance in the characteristic tunes of utterances elicited in Condition A (echo question), Condition B (broad focus) and Condition C (narrow focus), of the form *Tu as réservé quel resto pour jeudi soir* ? lit. 'You have booked which restaurant for Thursday evening?'

The role of intensity in distinguishing the three tunes is not very clear.

I examined whether the Echo Tune had higher intensity than the other two tunes on the *wh*-word *quel* 'which' or the final syllable of the utterance, since this has been reported for German (Repp & Rosin 2015). This was however not the case. The intensity on the *wh*-word in the Echo Tune was even lower than in the Broad focus Tune [-1.2 dB] and the Narrow focus Tune [-1.1 dB] (see Table 5 in Appendix B).

The sentences uttered with both the Echo Tune and the Narrow focus Tune displayed on average less intensity than the ones uttered with the Broad focus Tune (see Table 6 in Appendix B). The lower intensity was manifested in many different syllables. These were situated in the pre-focal area, the post-focal area and the focus (the *wh*-phrase) itself, i.e. scattered across the sentence.

4.4   Summary of the results

In sum, the main properties of the three tunes are the following:

ALL THREE TUNES
- There is a high point associated with the end of the *wh*-phrase, followed by a fall on the PP.
- There is at least a very small sentence-final rise.

ECHO TUNE AND NARROW FOCUS TUNE (COMPARED TO BROAD FOCUS TUNE)
- The pitch is lower in the area preceding the *wh*-phrase.
- There is a strong similarity in pitch between the F0 maximum on the final syllable of the *wh*-phrase (the focus) and the F0 maximum of the final syllable of the utterance.
- The sentence-final rise is larger.
- The final syllable of the utterance has a shorter duration.

ONLY ECHO TUNE
- The F0 values are elevated from the final syllable of the *wh*-phrase onwards.
- As the pitch in the area preceding the *wh*-phrase is low, the pitch range is extremely large.
- The *wh*-word has a longer duration.
- (The Echo Tune is not uttered with higher intensity.)

ONLY NARROW FOCUS TUNE
- There is no, or a much lower high point on the *wh*-word *quel* 'which'.

5   Discussion

The analyses were built on the sentences uttered with the characteristic tune of every condition: the 87% of the cases elicited in Condition A uttered with the Echo Tune, the 70% of the cases elicited in Condition B uttered with the Broad focus Tune and the 69% of the cases elicited in Condition C uttered with the Narrow focus Tune. Assuming that these tunes are representative of questions uttered in their respective discourse contexts, I now analyse their prosodic properties. In what follows, I

consider the effects of information structure (RQ A.; Section 5.1) and the effect of a reading as an echo versus an information seeking question (RQ B.; Section 5.2). Lastly, I discuss some prosodic properties of French *wh*-in-situ questions that are not affected by these contextual factors (RQ C.; Section 5.3).

5.1   The influence of information structure

In this section, I discuss to what extent information structure is reflected in the prosody of French *wh*-in-situ questions (RQ A.). If information structure is marked prosodically, this should result in prosodic features that are present in both echo and narrow focus questions but absent in broad focus questions. Several such features were indeed found in the data.

Importantly, the final syllable of the *wh*-phrase and the final syllable of the utterance display a similar F0 maximum in both the Echo Tune and the Narrow focus Tune, but not in the Broad focus Tune. The average difference between these two values in an utterance was 0.6 st in echo questions and 0.1 st in information seeking narrow focus questions, but 2.5 st in broad focus questions. I consider this to be a clear indication of tone copying ((4), repeated here as (10)), i.e. the copying of the high tone (in interrogatives) at the final syllable of the focus to the final syllable of the utterance.[35]

(10) *Tone copying*
       a. Declarative
          $[[$ ...   focus$]_{L\%}$ ... $]_{L\%}$
                          └ COPYING ┘

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[35] Interestingly, the tone that is 'copied' seems to be the tone at the end of the *wh*-phrase, while the focus proper is only on the *wh*-word. This provides evidence for the idea that the tone that marks a focus in French is a phrasal boundary tone (cf. Beyssade et al 2004b; Féry 2001; 2013) rather than a nuclear pitch accent (Di Cristo 2016).

b. Interrogative

$$[[\quad ... \quad \text{focus}]_{H\%} \quad ... \quad]_{H\%}$$
$$\llcorner_{\text{COPYING}} \lrcorner$$

The results show that tone copying, which is a known correlate of narrow focus marking in declaratives and yes/no questions in French, also marks narrow focus in *wh*-in-situ questions. They also confirm experimentally that what is copied is not a high tone in an abstract sense, but an absolute F0 value. In (echo) questions with narrow focus on the *wh*-word, the F0 maximum on the final syllable of the utterance is an exact copy of the F0 maximum of the final syllable of the focus, defying declination, which provides experimental support to the initial claim by Martin (1981).

The tone copying phenomenon appears to have a significant side effect. Recall the disagreement in the literature on whether or not French *wh*-in-situ questions display a large sentence-final rise (see also Chapter 2). In line with observations made by Reinhardt (2019), I only observed a large final rise in part of the data. A new observation made in this study is that the presence of a large sentence-final rise is correlated with focus width. Information seeking questions with broad focus displayed only a very small rise, while both echo and narrow focus questions displayed a rise with a larger pitch excursion, induced by the higher F0 values on the final syllable of the utterance. In turn, these higher F0 values seem to be due to tone copying. When the high F0 maximum at the end of the focus gets copied to the final syllable, it raises the pitch on the final syllable of the utterance. Therefore, the data show that the presence of a large sentence-final rise in French *wh*-in-situ questions may well be the result of narrow focus marking. As I further explain in Chapter 6, this accounts for some of the disagreement in the literature regarding the presence of a large sentence-final rise: French *wh*-in-situ questions may or may not display such a rise, depending on their focus structure.

Another observation is that tone copying seems to be accompanied by durational cues. The final syllable of the utterance has a shorter duration in both echo and narrow focus questions than in broad focus questions. In echo questions, the penultimate syllable is also shortened. This

shortening may well be a correlate of the copied tone, which has not, to my knowledge, previously been described in the literature.

Regarding the area preceding the *wh*-phrase, recall that it is not yet clear whether given material preceding the focus is prosodically marked in French ((6), repeated as (11)).

(11) [[[given pre-focus]   focus]H%   ...]H%   (interrogative)

In the current experiment, the area preceding the *wh*-phrase is expected to be part of the focus in broad focus questions, but precedes the focus in echo and narrow focus questions. The results show that the participle that precedes the *wh*-phrase has lower pitch in both echo and narrow focus questions than in broad focus questions. This is evidence of pitch compression in the given area preceding the focus, in line with findings by Touati (1987), Dohen and Lœvenbruck (2004) and Jun and Fougeron (2000), but contra Beyssade et al. (2004b). In echo questions, pitch compression was also present on the auxiliary.

The restriction of the *wh*-phrase, e.g. *resto* 'restaurant' in *quel resto* 'which restaurant', was *given* in narrow focus questions but not in broad focus questions. Recall that given material following a focus is not always compressed in French. Indeed, the restriction of the *wh*-phrase showed no pitch compression in narrow focus compared to broad focus questions. An explanation that comes to mind for this is that the restriction in itself is not a phonological phrase. Recall that unlike in the Germanic languages, post-focal givenness compression seems to occur mainly in material that forms its own (maximal) phonological phrase (Destruel & Féry 2015; Féry 2014; Hamlaoui et al. 2012). However, there were no indications of post-focal givenness compression of the PP either. Compared to the PP in broad focus questions, the PP in narrow focus questions did not display a lower F0 or a shorter duration. As the PP followed a prosodic boundary, this should form its own phonological phrase. Therefore an observation by Féry (2014) seems a more likely explanation for the absence of post-focal pitch compression. She suggests that post-focal compression is optional in French (even in complete phonological phrases). In other words, unlike givenness deaccentuation

in the Germanic languages, post-focal givenness compression in French is not always present. The current results are in line with this observation.

As I explained in Chapter 3, a common assumption in the literature is that in *wh*-questions, the *wh*-phrase is the focus. Under this view, the context preceding a *wh*-question is not predicted to affect its information structure, unlike in declaratives. I argued in Chapter 3 that in certain languages, the context may also affect what is focused in *wh*-questions. The results of the experiment show that this is indeed the case. Tone copying is a known correlate of narrow focus marking in French, which has often been observed in declaratives and yes/no questions. Its presence in French *wh*-in-situ questions with narrow focus, as opposed to those with broad focus, therefore shows that focus is marked in French *wh*-in-situ questions as well. Consequently, the results of the experiment provide supporting evidence in favour of the approach adopted in the dissertation, following Jacobs (1994; 1991), Beyssade (2006), and Beyssade et al. (2007).

In addition, I mentioned in Chapter 3 that according to Ladd (2009), languages fall into one of two groups with respect to whether they mark the *wh*-phrase as the focus of a *wh*-question. I suggested that French belongs to the group of languages that does not mark the *wh*-phrase as the focus, which is based on the behaviour of *wh*-fronted questions (Beyssade 2006; Beyssade et al. 2007). According to Ladd (2009: 227), *wh*-in-situ questions in *wh*-in-situ languages like Turkish or restricted *wh*-in-situ in *wh*-fronting languages like English tend to fall in the other group, in which the *wh*-phrase is marked as the focus. Yet the results show that French *wh*-in-situ questions pattern with the *wh*-fronted questions of the language. Consequently, the data conflict with the idea that the focus in French *wh*-in-situ questions equals the *wh*-phrase (Mathieu 2016) as well as with the proposal that French *wh*-in-situ questions have a narrow focus on the *wh*-phrase while *wh*-fronted questions display a broad focus (Hamlaoui 2011).

5.2   The influence of an echo versus an information seeking question

I now consider whether the distinction between echo and information seeking questions is reflected in the prosody of French *wh*-in-situ questions (RQ B.). If this is the case, the prosody of echo questions should differ from those of information seeking questions, including those with the same information structure. The results show that this is indeed the case. In what follows, I discuss the prosodic features of echo questions that are absent in information seeking questions with either broad or narrow focus.

Most importantly, the F0 of echo questions is much higher than in information seeking questions, but only from the final syllable of the *wh*-phrase onwards (12).

(12)   ⟵————————————⟶
      Tu   as   réservé quel res**to**   **pour jeudi   soir** ?
      you have booked which restaurant for   Thursday evening?

This is only partly consistent with the descriptions by Di Cristo (1998) and Boeckx (1999), who describe echo questions as displaying a high pitch overall. The difference in pitch with information seeking questions is very large here: on average approximately 4 semitones. Apart from this elevation of the pitch, the utterance seems to perform the same tonal movements as in information seeking questions with the same information structure. Since the area preceding the *wh*-phrase has low pitch, like in information seeking narrow focus questions, the pitch range within echo questions is extremely large: on average 8.2 semitones.

Interestingly, the *wh*-word *quel* 'which' does not have a higher pitch than in information seeking questions with broad focus. This is thus not a distinguishing feature of echo questions, despite previous claims (Chang 1997: 17; Mathieu 2002). However, the *wh*-word *quel* 'which' and the preceding syllable are lengthened, as is the *wh*-phrase as a whole (e.g. *quel resto* 'which restaurant'), as predicted by Engdahl (2006). This longer duration is what distinguishes the *wh*-word in echo questions from the one in broad focus questions.

A feature that is consistently mentioned in the previous literature as a property of echo questions in French is a sentence-final rise (e.g. Déprez et al. 2013; Di Cristo 1998; Mathieu 2002). The current results confirm the presence of a rise, but show that it is not a distinguishing feature of echo questions. Moreover, although the pitch movement ends higher in echo questions, the rise does not seem to be larger than in information seeking questions with the same information structure. The rise simply starts and ends higher. As suggested by González and Reglero (2018) for Spanish, the impression of a more prominent rise in echo questions might have been caused by their larger pitch range. Also, as some previous studies have considered questions in which the *wh*-phrase was the final element of the utterance, the sentence-final pitch movement may in some cases have been confounded with the pitch movements associated with the *wh*-phrase.

French echo questions were not differentiated from information seeking questions by higher intensity, differently from their German counterparts (Repp & Rosin 2015). On the *wh*-word, echo questions even had less intensity than both types of information seeking questions.

These results show that speakers of French mark echo questions with a prosody that is different from information seeking questions. A distinct prosody for echo questions has been established for various other (unrelated) languages as well (see Chapter 3). However, the current study on French is the first one (to my knowledge) that explicitly compared echo questions to information seeking questions with the same information structure, which excludes this as a potential confound, thus strengthening the result.

In Chapter 3, I presented a tentative generalisation regarding the prosodic properties of echo versus information seeking questions, based on the small sample of languages available. I suggested that in languages with a falling sentence-final intonation in *wh*-in-situ information seeking questions, echo questions seem to display a sentence-final rise, while in languages with a sentence-final rise in information seeking questions, echo questions also display an expanded pitch range. This generalisation also holds for French. It falls neatly in the second category, with a

sentence-final rise in both question types and an expanded pitch range in echo questions expressing auditory failure.

Sobin (1990, 2010), in two influential papers, labelled the rising intonation of echo questions in general 'surprise intonation'. Yet the results of this study show that, for echo questions to be marked with a particular prosody, surprise is not needed. It is a question for further research to what extent the prosody of echo questions expressing surprise is different from those investigated here. In some other languages in which both types of echo questions have been studied, their prosody was only subtly different, e.g. in American English and German (Bartels 1997; Repp & Rosin 2015). In other languages, the prosodic features of echo questions expressing surprise were more pronounced, e.g. a more expanded pitch range as in North-Central Peninsular Spanish (González & Reglero 2018) or uttered at a higher pitch register as in Shingazidja (Patin 2011). In investigating this for French, it should be kept in mind that a larger pitch range can be a marker of surprise (Hirschberg & Ward 1992) or emotion in general (Bänziger & Scherer 2005), as well as one of the main features of French echo questions expressing auditory failure.

5.3   Prosodic properties that were unaffected by context

The results show that broad focus information seeking questions display a high point associated with the wh-word, a high point followed by a fall (a prosodic boundary) at the end of the wh-phrase and a small rise at the end of the utterance. The final rise was already discussed above in relation to the tone copying phenomenon. Here, I discuss the prosodic boundary and the accent on the *wh*-word, which were not affected by either of the two factors discussed in this chapter (RQ C.).

Questions elicited in all three conditions exhibited a prosodic boundary between the in-situ *wh*-phrase and the subsequent PP. This is in line with findings by Mathieu (2016) (Section 2.1; see also Chapter 2). Mathieu took the prosodic boundary at the end of an in-situ *wh*-phrase to be a correlate of focus marking, assuming that the *wh*-phrase equals the focus in *wh*-questions, cf. (2), repeated as (13).

(13) [[...   focus]_{TONE}   ...   ]

However, the F0 maximum of the final syllable of the *wh*-phrase, the location of the prosodic boundary, was the same in questions with broad and narrow focus. This shows that the prosodic boundary was also present in broad focus questions, in which the focus extended beyond the location of the boundary, as confirmed by the lack of tone copying. I conclude therefore that the mere presence of a prosodic boundary between the *wh*-phrase and the subsequent PP is not in itself a correlate of focus marking.

A second feature that was not affected by the two factors discussed in this chapter was the accent on the *wh*-word in broad focus and echo questions. This is very similar to the results described in Gryllia et al. (2016) (cf. Wunderli 1983). It differs from the results described in Baunaz (2016) and Baunaz and Patin (2011), who did not find an accent on the *wh*-word in questions similarly uttered in an out of the blue context (cf. Wunderli 1982; Wunderli & Braselmann 1980). A possible reason for this difference might be the relatively short *wh*-phrases and/or short target stimuli used in these latter studies, as compared to the ones used in Gryllia et al. (2016), Wunderli (1983) and the current study.

In the narrow focus questions, the accent on the *wh*-word was either absent or significantly lower than in both broad focus and echo questions. The fact that the accent is diminished in the only condition where a contrastive topic precedes the utterance raises the question whether the lack of accentuation and the presence of the contrastive topic are related. A contrastive topic in French is associated with a rise, which Beyssade et al. 2004a;b) analyse as a pragmatic accent, which they call a 'C accent'. A C accent marks the use of a complex discourse strategy, such as a topic shift. The accent on in-situ *wh*-expressions has also been analysed as such a C accent. In sentences with several C accents, only one (usually the highest one in the syntactic tree) is obligatory (Beyssade et al. 2004a;b). This is illustrated in (14), which contains an obligatory C accent on the contrastive topic *le dimanche* 'on Sunday' (14a,b) and an optional one on *des cigarettes* 'cigarettes' (14b).

(14) A: Que fume Bernard ?
            'What does Bernard smoke?'

     B: a. Le **DI**manche, Bernard fume des cigarettes
              (, le reste de la semaine, il fume la pipe).

         b. Le **DI**manche, Bernard fume des **CI**garettes
              (, le reste de la semaine, il fume la pipe).

         'On Sunday, Bernard smokes cigarettes
         (, the rest of the week he smokes his pipe).'

                                        [adapted from Beyssade et al. 2004b: 494, ex. 28b]

This seems to fit the data of the current experiment. If following Beyssade et al. (2004b), the *wh*-word does not obligatorily receive an accent because of the preceding accent on the contrastive topic, this explains why the high tone associated with the *wh*-word is often absent in questions elicited in the narrow focus condition.[36,37]

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[36] The presence of the contrastive topic may also have influenced some other aspects of the results, which seem less relevant. Firstly, the initial syllable (the pronoun) had a longer duration than in both other conditions and the second syllable (the auxiliary) to some degree as well. Secondly, while echo questions had a lower F0 than broad focus questions on both the auxiliary and the participle, this was only significant on the participle for narrow focus questions. It seems likely that this lack of significance is due to the high point associated with the contrastive topic, after which the F0 was in some cases lowered gradually over the first syllables of the utterance.

[37] To be precise, the high tone is in some cases absent and in some cases considerably lower than in the other two conditions.

6 Conclusions

This chapter investigated the prosody of French *wh*-in situ questions. In particular, I investigated the influence of two aspects that relate to context: the information structure of the question and the distinction between echo and information seeking questions. The results show that both affect the prosody of French *wh*-in situ questions.

Broad focus information seeking questions display a high point associated with the *wh*-word, a high point followed by a fall (a prosodic boundary) at the end of the *wh*-phrase and a small rise at the end of the utterance. The presence of a prosodic boundary between the *wh*-phrase and the subsequent material was not in itself a correlate of focus marking (contra Mathieu 2016), as a boundary was also present in broad focus questions.

Yet, focus is clearly marked in French *wh*-in situ questions. The F0 maximum of the final syllable of the focus is copied to the final syllable of the utterance. This 'tone copying' is a known correlate of focus marking in declaratives and yes/no questions in French. In addition, the given material preceding the focus is compressed, confirming Touati (1987) and Dohen and Lœvenbruck (2004). Yet, given material following the focus showed no pitch compression, in line with the observation that post-focal compression is not always present in French (Féry 2014).

Regarding tone copying, the study confirms experimentally that what is copied is not an abstract tone but an absolute F0 value (defying declination), as already suggested by Martin (1981). Moreover, it shows that tone copying is accompanied by a shortening of the final syllable of the utterance. Furthermore, tone copying has a significant side effect. As the copied tone raises the pitch on the final syllable of the utterance, it creates a large sentence-final rise in *wh*-in-situ questions with narrow focus. The study therefore confirms Reinhardt's (2019) observation that a large final rise is present in part of the French *wh*-in-situ questions and adds that the rise is a correlate of narrow focus marking.

In Chapter 3, I discussed the common idea in the literature that the *wh*-phrase equals the focus in *wh*-questions, regardless of the preceding

context. I argued that in certain languages, the context may also affect what is focused in *wh*-questions. I suggested that at least with respect to *wh*-fronting questions, French is one of these languages (Beyssade 2006; Beyssade et al. 2007). Based on the prosodic properties of questions preceded by different contexts, the results of the experiment demonstrate that focus may indeed be marked in *wh*-questions (cf. Beyssade 2006; Beyssade et al. 2007; Jacobs 1994; 1991 and contra Mathieu 2016; Hamlaoui 2011). In addition, the chapter shows that for French, the this also the case in *wh*-in-situ questions.

The prosody of French *wh*-in-situ questions is also affected by the distinction between echo and information seeking questions. The pitch in echo questions is elevated from the final syllable of the *wh*-phrase onwards, resulting in a much larger pitch range. Also, the *wh*-word has a longer duration. French echo questions are not marked by a higher intensity, nor by a sentence-final rise with a larger pitch excursion. The prosody of French echo questions falls neatly in the tentative generalisation I proposed in Chapter 3: in languages such as French, in which information seeking questions display a sentence-final rise, echo questions are marked by an expanded pitch range. The results show that echo questions are prosodically distinct from information seeking questions, even if their information structure is the same. The distinct prosody is unrelated to the emotion of surprise. This sets echo questions apart as a separate question type in terms of prosody.

5 A role for context: intervention effects

1 Introduction

The previous chapter showed that context can influence the prosodic realisation of French *wh*-in-situ questions. Context may also affect the presence of intervention effects. As I explained in Chapter 2 (Section 5), the term 'intervention effects' refers to the phenomenon that certain expressions, such as *seulement Jean* in (1a), may not precede an in-situ *wh*-phrase (Beck 1996; Bošković 1998; 2000; Chang 1997; Mathieu 1997; cf. Obenauer 1976).

(1) 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]

W*h*-fronting, on the other hand, is not blocked by a focus expression like *seulement Jean* (1b). The expressions that induce intervention effects, the 'interveners', include focus expressions, a number of quantificational expressions and negation.

There are many different accounts of intervention effects in French (Baunaz 2011; Bošković 2000; Hamlaoui 2010; Mathieu 1999; Starke 2001). Following Beck (1996) and Bošković (2000) and Starke (2001) for French, among others, I assume that intervention effects arise when an intervening expression blocks the *wh*-phrase from moving covertly to the left periphery of the sentence, as is visualised in (2).

(2) [_{CP} ... intervener ... *wh*-phrase]
                                            COVERT
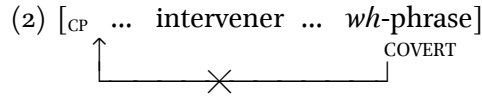
In (1b) above, the *wh*-phrase moves overtly to Spec CP. I assume that in (1a), the *wh*-phrase must move covertly and that covert movement is blocked by the presence of an intervener (cf. Beck 1996; Bošković 1998; 2000; Starke 2001).

In this chapter, I focus on a particular aspect of intervention effects, namely the influence of context. Starke (2001), and building on that, Baunaz (2005; 2011; 2016) show that when a sentence displays intervention effects as in (3), a particular type of context can make it acceptable (3').

(3) **Tous les témoins*   ont   reconnu   qui ?
       all   the witnesses have recognized who
       'Whom did all the witnesses recognize?'

(3') During a trial, witnesses and defendants are confronted. One of the
       defendants has been accused unanimously. The journalist asks:

       Et *tous les témoins* ont reconnu qui ?

                                                                    [Baunaz 2016: 157, ex. 40b]

This raises the questions (a) what property of the context is responsible for the improvement and (b) why context would have an effect on intervention effects.

As I discussed in Chapter 2, the data regarding intervention effects display much variation. Judgments may be different for different interveners. Moreover, there is variation regarding sentences with the same intervener. As context may have an effect on acceptability, it may explain some of the variation that is described in the literature. The effect of context may also be relevant for judgments of sentences without context. That is, if a sentence is presented in isolation, a speaker is free to envisage his/her own context.

Consequently, in order to further understand the effect of context on intervention effects, the chapter aims to answer the following research questions:

(4) *Research questions*
    RQ1. What characterizes a context that voids intervention effects?
    RQ2. Why does this contextual property void intervention effects?
    RQ3. What data variation can the contextual property account for?

I propose that the type of context that voids intervention effects is one that makes the entire *wh*-in-situ question 'given' according to the framework of Büring (2016). I call this 'Maximally Given'. I suggest that in such a context, a contextually supplied choice function is available (cf. Kratzer (1998) for specific indefinites). Maximal Givenness allows for recoverability of the choice function. The contextually supplied choice function provides an alternative for covert movement, circumventing the intervention effects configuration. I show that the proposal explains both variation among interveners and among sentences with the same intervener, as well as the absence of intervention effects in echo questions.

The chapter has the following structure. In Section 2, I lay out the data regarding intervention effects in French *wh*-in-situ questions, focussing on the variation and the role of context. Section 3 discusses Baunaz's account regarding the influence of context on intervention effects (Baunaz 2005; 2011; 2016, building on Starke 2001). In Section 4, I propose a generalisation regarding the type of context that voids intervention effects, answering RQ1. I lay out the proposed explanation for why the generalisation holds, i.e. the contextually supplied choice function, in Section 5 (RQ2). In Section 6, I discuss the variation that is accounted for by the proposal (RQ3). I show that the proposed analysis also covers the absence of intervention effects in echo questions in Section 7. The chapter is concluded in Section 8.

2   The relevant data

This section discusses some empirical claims that have been made in the literature on intervention effects in French *wh*-in-situ questions. I provide a brief overview of the expressions that have been said to intervene (Section 2.1). Then, I discuss some variation that is attested in the data (Section 2.2). Finally, I discuss the observation that context may influence the relevant judgments (Section 2.3).

2.1   Interveners

It is not yet clear what exactly constitutes the class of potential interveners in French *wh*-in-situ questions. Many expressions have been claimed to intervene, but the data are often not conclusive. An expression that is regarded as an intervener by one author, is sometimes not considered to intervene by another (see also Section 5 in Chapter 2). Moreover, the expressions that are claimed to be interveners do not apparently form a well-defined category. I have attempted a classification in Table 1 below. It lists the expressions that have been mentioned by at least one publication in the relevant literature as an intervener; a list of the publications is included as Appendix C. (The symbol '^' in the table marks the expressions that receive only very few mentions in the literature.) It is quite possible that there are expressions that intervene, but are not listed in the table, as it contains the potential interveners that have been described as such to date.

Table 1. The expressions that have been mentioned in the literature as interveners[38]

CATEGORY	INTERVENERS
Negation	*pas* 'not'; *personne* 'nobody'; *jamais*^ 'never'; *aucun N*^ 'no N'; *aucun des N*^ 'none of the N'
Universal	*tous les N* 'all the N'; *tout le monde* 'everybody'; *toujours* 'always'; floating *tous* 'all' *chacun des N* 'each of the N'; *chacun* 'each' (non-floating); *chaque N*^ 'each N'; floating *chacun*^ 'each'
Focus expression	*seulement X* 'only X'; *seul X*^ 'only X'; *même X*^ 'even X'; contrastive focus
Indefinite expression	*plusieurs N* 'several N'; *la plupart des N*^ 'most of the N'; *plus de cinq N*^ 'more than five N'; *exactement cinq N*^ 'exactly five N'; *certains N*^ 'certain N'; *un N*^ 'an N'; *quelqu'un*^ 'someone'
Frequency adverb	*souvent* 'often'
Degree quantifier	*beaucoup*^ 'a lot'; *trop*^ 'too much'; *peu*^ 'little'
Wh-phrase	with intermediate *wh*-phrase; with *si* 'whether'

2.2 Data variation

The data regarding the potential interveners in Table 1 give rise to several types of variation. There are differences among interveners. There is also

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[38] Chang (1997: 63), cited by Cheng & Rooryck (2000), claims that modal verbs also constitute interveners. However, other authors have repeatedly denied this (Adli 2004; 2006; Beyssade 2006; Boucher 2010; Hamlaoui 2011). I therefore do not list modal verbs in the table. See also Starke (2001: 24), who mentions that modals can actually improve judgments.

variation in judgments concerning sentences with the same intervener, even with identical sentences.

For some interveners, such as expressions associating with focus, it has not been disputed that they cause intervention effects (5).

(5) *_Seulement Jean_   arrive   à   faire quoi ?
　　 only　　　 Jean arrives to do   what
　　 Intended: 'What does only JEAN manage to do?'

<div align="right">[Mathieu 1999: 447, ex. 12a]</div>

Yet for other expressions, their status as interveners is controversial. This is particularly the case for _pas_ 'not' and several universal quantifiers (_toujours_ 'always', _tous les N_ 'all the N', _tout le monde_ 'everybody' and floating _tous_ 'all'). The examples in (6) and (7) display contradictory judgments of sentences with the same intervener.

(6) a. *Tu ne fais _pas_ quoi ce   soir?
　　　　 you NE do   not what this evening
　　　　 Intended: 'What aren't you doing tonight?'

　　 b. Il (ne) doit _pas_ toucher qui ?
　　　　 he NE must not touch   who
　　　　 'Who mustn't he touch?'

<div align="right">[Mathieu 2002: 35, ex. 2a / Adli 2006: 177, ex. 9a]</div>

(7) a. *_Tout le   monde_ a   vu   quoi ?
　　　　 all   the world   has seen what
　　　　 Intended: 'What did everyone see?'

　　 b. Et   à cette fête, à ton avis,
　　　　 and at this   party in your opinion

　　　　 tout le   monde a   embrassé qui ?
　　　　 all   the world   has kissed   whom

　　　　 'And at this party, in your opinion, whom did everybody kiss?'

<div align="right">[Mathieu 1999: 464, ex. 45b / adapted from Poletto & Pollock 2015: 86, ex. 20a]</div>

There is even variation in judgments of identical sentences, as is shown in (8), (9) and (10).[39]

(8) (*) Il (n') a   *pas* rencontré qui ?
        he NE has not met   who
        'Whom didn't he meet?'

[✓Adli 2004: 203, ex. 3a / *Chang 1997: 63, ex. 34a]

(9) (*) *Tous les étudiants* ont   rencontré qui ?
        all   the students   have met   who
        'Whom did all the students meet?'

[✓Beyssade 2006: 182, ex. 15a / *Chang 1997: 60, ex. 27a]

(10) (*) Jean / il admire   *toujours* qui ?
         Jean   he admires always   who
         'Who does Jean/he always admire?'

[✓Beyssade 2006: 182, ex. 15e / *Chang 1997: 63, ex. 34c]

In short, the data display at least two kinds of variation: among different interveners and among sentences with the same intervener, including identical sentences.

2.3   The effect of context

What may cause this variation? An important factor that seems to influence acceptability is the context in which the question is uttered. The interveners for which this has been observed most clearly are *plusieurs N* 'several N', universals like *tous les N* 'all the N' and *pas* 'not' (Adli 2004; 2006; Baunaz 2005; 2011; 2016; Beyssade 2006; Boucher 2010b; Engdahl 2006; Starke 2001).

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[39] At first sight, these examples seem to reflect a difference between French as spoken in France and that which is spoken in Canada. However, the issue is more complicated and I will return to it in Chapter 6.

A question with an intervener, which is judged infelicitous in isolation, may be acceptable with context (Starke 2001). This was demonstrated in (3) and (3'), which are repeated here as (11) and (11').

(11) *_Tous les témoins_   ont   reconnu   qui ?
       all   the witnesses have recognized who
       'Whom did all the witnesses recognize?'

(11') During a trial, witnesses and defendants are confronted. One of the defendants has been accused unanimously. The journalist asks:

       Et _tous les témoins_ ont reconnu qui ?

                                                      [Baunaz 2016: 157, ex. 40b]

Such data have led to seemingly opposing views in the literature. Some authors claim that French _wh_-in-situ questions do not display intervention effects: one must simply provide an appropriate context for the sentence not to appear odd (Adli 2004; 2006; Beyssade 2006). Other authors maintain that intervention effects occur in French _wh_-in-situ questions, but that they disappear in a particular type of context (Starke 2001; Baunaz 2005; 2011; 2016). These two points of view appear contradictory, but are similar in the sense that they both imply that certain sentences are only felicitous in a particular context.

The observation that a particular context can improve judgments may also be relevant for sentences presented to informants in isolation. In that situation, an informant is free to construe his/her own context. Since some contexts void intervention effects, this may lead to variation in judgments. One speaker may envisage another context or a more elaborate one than another. Some speakers may be very good at quickly construing the relevant context, which predicts that they accept questions with interveners more easily. Speakers may even envisage different contexts from one moment to another.

What is it about context that may void intervention effects? An indication comes from an observation made by both Engdahl (2006) and Beyssade (2006). As they show, a question containing _pas_ 'not' is

acceptable in a context that already contains the negation, as in (12). (The example is not acceptable to all speakers, to which I come back below.)

(12) 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; cf. Beyssade 2006: 182, ex. 17b]

Beyssade calls this a 'negative discourse theme' (p.182); Engdahl mentions that 'the negative proposition has to be part of the dialogue participants' ground' (p.100).

An elaborate account of the relation between intervention effects and context, which goes in a different direction, was proposed by Baunaz (2005; 2011; 2016), building on Starke (2001). I discuss this in the next section, before presenting my own proposal in Sections 4, 5 and 6.

3   Previous approach: nanosyntax and Relativized Minimality

Baunaz (2005; 2011; 2016) assumes a nanosyntactic approach to grammar. In nanosyntax, a syntactic head equals a feature and a morpheme can spell out several features at once. A lexical entry, for instance *qui* 'who', can lexicalise feature trees of different sizes. In other words, there can be different variants of *qui* 'who', which have different feature make-ups. This is illustrated in (13), which is based on the most recent version of Baunaz's proposal (Baunaz 2016). All three feature trees in (13) are lexicalisations of *qui* 'who'. In (13), Q stands for 'Quantificational', Op_{wh} is a null operator and *n* is a nominal feature. *f1* and *f2* represent 'partitivity'

and 'specificity' respectively, which are features with semantic functions that I Introduce below. The features in the trees are ordered in a fixed hierarchy. As is shown in (13), all three variants of *qui* 'who' contain a nominal element and an operator, but *qui* 'who' does not always contain *f1* or *f2*.

(13) a.   b.   c.

```
   a.                b.                   c.
        Q                 Q                    Q
       / \               / \                  / \
    OpP   nP          OpP   f1P            OpP   f2P
     △    /            △    / \             △    / \
   Op_wh n          Op_wh f1  nP         Op_wh f2  f1P
                             /                     / \
                            n                    f1   nP
                                                      /
                                                     n
```
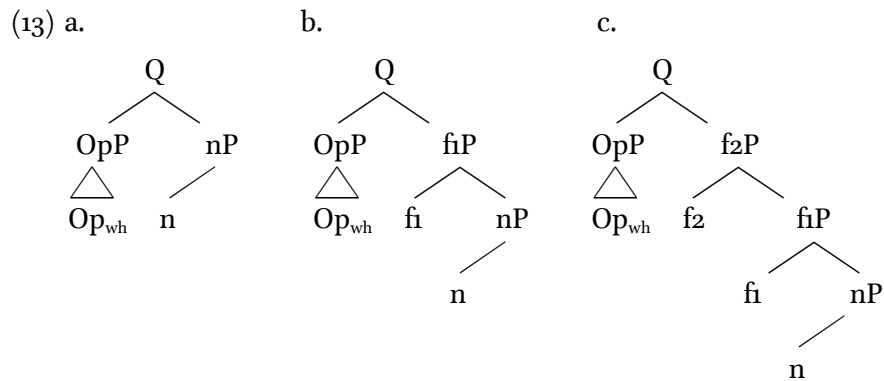
Baunaz takes expressions that intervene to be composed of similar features as one of the trees in (13). I display Baunaz's (2016) representation of *tous* 'all' as an example (14).

(14)
```
          Q
         / \
      OpP   f1P
       △    / \
     Op_v f1   NP
              /
             N
            pro
```
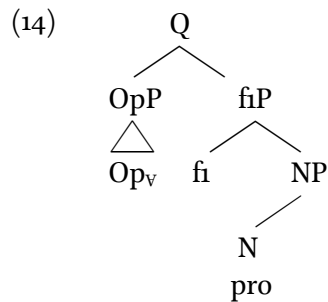
Crucially, *tous* 'all' is also a quantificational element that contains f1.

Now recall the intervention effects configuration as presented in (2), repeated here as (15).

(15) [$_{CP}$ ... intervener ... *wh*-phrase]
         ↑_____×_____COVERT
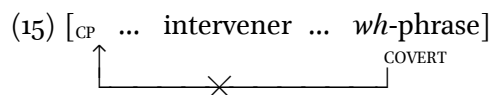
Baunaz also assumes that intervention effects arise when an intervener blocks non-visible movement of the *wh*-phrase. Her explanation, following Starke (2001), is that movement is blocked by features of the same class, i.e. feature-based Relativized Minimality (Rizzi 2004). *Wh*-phrases and interveners both belong to the class of quantificational elements *Q*. Therefore, an in-situ *wh*-phrase with the feature labelled f1 (cf. (13b) or (13c)) can cross an intervener without the feature f1, but not an intervener that also has this feature, i.e., an intervener with the feature f1 or with the features f1 and f2. Baunaz (2016: 164) states that a *wh*-phrase "that has something more than a potential intervener is free to move, whereas a [*wh*-phrase] that has either something less, or that has a similar feature composition as a potential intervener, will be blocked." Consequently, an in-situ *qui* 'who' with the feature composition in (13b) cannot move past *tous* 'all' in (14), because they both have the feature labelled f1. The *qui* 'who' in (13a) can also not move past *tous* 'all'. Only the *qui* 'who' in (13c) can do so, because it has 'something more' than *tous* 'all', namely the feature labelled f2. In other words, *tous* 'all' induces intervention effects for two of the three variants of *qui* 'who'. More generally, an expression that induces intervention effects for one type of *qui* 'who', might not block movement of another type of *qui* 'who'. (I discuss some other interveners in Section 6.1 below.) The feature composition of the *wh*-phrase and that of the potential intervener together determine whether a sentence will display intervention effects.

The features that I have so far called f1 and f2 represent semantico-pragmatic meanings that relate to the kind of context in which a *wh*-phrase can be used. That is how Baunaz accounts for the influence of context. The feature labelled f1 corresponds to Baunaz's (2011; 2016) 'partitivity' (a feature 'part' dominated by a phrase 'partP').[40] A partitive *wh*-phrase can be used in a context as in (16), which mentions a pre-established set of prizes.

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[40] It is called 'range' by Baunaz (2005) and Starke (2001).

(16) During the end-of-year party, various prizes were awarded to the best
      students: maths, English, French, physics, etc. This year, all the
      students got a prize. After the party, the dean's wife asks her husband:

   Tous les étudiants ont   reçu   quoi / quel   prix ?
    all   the students   have received what which prize
    Intended: 'What/which prize did all the students receive?'

                                         [adapted from Baunaz 2016: 156, ex. 39b]

Partitivity resembles Pesetsky's (1987) D-linking or Cinque's (1990)
referentiality in that the value to fill a partitive *wh*-phrase belongs to a
pre-established set (cf. Enç' 1991 'partitive specifics'). As the context in (16)
licenses a partitive *wh*-phrase, which cannot cross the partitive intervener
tous les N 'all the N', the question is unacceptable in this context.

   The feature I referred to as f2 is Baunaz's 'specificity' (a feature 'spec'
dominated by a phrase 'specP'). A specific *wh*-phrase is felicitous in a
context like (3'), repeated as (17), in which it is already known that there is
a defendant who has been accused (i.e. recognized) by all the witnesses.

(17) During a trial, witnesses and defendants are confronted. One of the
      defendants has been accused unanimously. The journalist asks:

   Et   *tous les témoins*   ont   reconnu   qui ?
   and all   the witnesses have recognized who
   'And whom did all the witnesses recognize?'

                                              [Baunaz 2016: 157, ex. 40b]

The answer to this question makes reference to an individual that is
already familiar; the journalist merely asks for the identity of the
individual. So a question with a specific *wh*-phrase presupposes the
existence of a particular antecedent for the *wh*-phrase. According to
Baunaz, the speaker infers that the interlocutor has such an individual in
mind. The question in (17) is acceptable because the context licenses a
specific *wh*-phrase (i.e. with the feature specific), which can cross a
partitive intervener like *tous les N* 'all the N' (without the feature specific)
(see Section 6.1 for explanations about the assumed properties of different

interveners). Baunaz and Patin (2011) note that prosodically, a specific *wh*-word may be marked by an accent, but they noted this accent only in 54% of the cases.

Partitivity and specificity are presuppositions in Baunaz' proposal. For instance, partitivity presupposes the existence of a pre-established set. Baunaz calls a *wh*-phrase without either the feature specific or the feature partitive a 'non-presuppositional' *wh*-phrase (cf. (13a)). Such a *wh*-phrase does not require a particular type of context. As all interveners including non-presuppositional ones contain the feature 'Q', a non-presuppositional intervener still causes intervention effects in the presence of a non-presuppositional *wh*-phrase, which also contains Q.

Baunaz's (2005; 2011; 2016) work presents some important insights regarding the relation between context and intervention effects. Elaborating on Starke's (2001) work, she notes that context can void intervention effects and provides several examples. Her proposal accounts for the influence of context (a *wh*-phrase that can cross an intervener presupposes a particular type of context). It also explains the observed variation among different interveners (interveners differ in their feature compositions).

However, the features of the different interveners to some extent have to be stipulated. To my understanding, the status of the negative intervener *pas* 'not' as non-presuppositional is only based on the occurrence of intervention effects in different types of context. As this is exactly what the account seeks to explain, the proposal is circular in this respect. The status of the universal quantifiers *tous* (*les N*) 'all (the N)' as partitive and *chacun* (*des N*) 'each (of the N)' as specific is motivated independently, but I have reservations about this motivation, since the differences between these quantifiers can receive an alternative explanation (see Section 6.1). In addition, Table 1 in Section 2.1 displays a rather long list of items that have been claimed to be interveners. If Baunaz's proposal is to be extended to these interveners, they would all have to be shown to involve the relevant features.

In the next sections, I present an alternative proposal. Like Baunaz's proposal, it accounts for the observation that context can void intervention effects and for the variation among different interveners. Yet

it has a few advantages. First, there is no need to stipulate the presence of features on interveners. As I show in Section 6.1, the proposal can explain the data without assuming that there are three different classes of interveners. In addition, the proposal accounts for more of the observed variation, namely also for variation among sentences with the same intervener (Section 6.2). There is also no need to represent presupposition, a semantico-pragmatic notion, as a nanosyntactic feature within lexical items. Finally, as I will show in the next chapter, the proposal also accounts for several observations regarding *wh*-in-situ questions in languages like English and echo questions, i.e. beyond intervention effects.

4   Proposed generalisation: Maximal Givenness

I begin by examining what characterizes a context that voids intervention effects, cf. the first research question (RQ1), before considering why certain contexts may void intervention effects (RQ2) in the next section.

Recall the example about the trial in (17) above. As pointed out by Baunaz (2011; 2016), the context of (17) establishes the existence of a certain referent for the *wh*-phrase. There is a defendant who has been accused (and therefore recognized) unanimously, i.e. by all the witnesses. The *wh*-in-situ question merely asks to further specify the identity of this defendant. Let's assume that the accused defendant is defendant number 1, who is called monsieur Bisset, and that he is sitting on the left. In that case, possible answers to the question could be that all the witnesses recognized defendant number 1, that they all recognized monsieur Bisset, or that they all recognized the defendant on the left. The definite descriptions 'defendant number 1', 'monsieur Bisset' and 'the defendant on the left' would all refer to the same referent, which is the defendant who has been unanimously accused. The referent in the context and the one in the answer are the same. This means that the context entails the answer to the question. This is displayed in (18), where phrases with the same index refer to the same referent.

(18) context: [a specific defendant]$_i$ has been accused unanimously,
i.e. by all the witnesses

entails

answer: all the witnesses recognized [monsieur Bisset]$_i$ or
all the witnesses recognized [defendant number 1]$_i$ or
all the witnesses recognized [the defendant on the left]$_i$

When the context entails the answer to the question, the question can be paraphrased using a definite description as in (19) (in English).

(19) The defendant who has been recognized by all the witnesses
– who is it?

This is because the specific referent of the *wh*-phrase has already been fixed by the context. The generalisation I will propose in this section is that a context that voids intervention effects is one that entails the answer to the question as in (18) and (19). For this to be the case, the context must establish the existence of a specific referent for the *wh*-phrase, cf. Baunaz's specificity.

A second example in which the context voids intervention effects and entails the answer to the question is shown in (20). Note the underlined sentence in the context, which states that Claire could not use all the machines.

(20) Claire is a regular at Rainbow gym. She goes there 3 times a week. As it is usually the case in these infrastructures, she has a coach. Her coach usually prepares a plan for the day, i.e., she needs to use all the machines listed. That day Claire is a bit tired and she practices slower than usual. At the end of the session, she goes to the coach and tells him that <u>she could not use all the machines</u>. The coach, who wanted to prepare the next session is a bit angry. He asks:

Bon, t'   as   *pas* utilisé quelle machine ?
well you have not   used   which machine
'Well, which machine didn't you use?'

[Baunaz 2016: 154-155, ex. 35, underlining mine]

The context in (20) establishes that there is at least one machine that Claire did not use. It allows for the interpretation that Claire means she has not used a specific machine.[41] On this interpretation, the coach hears that Claire has not used a specific machine and enquires which one it is. That is, the coach asks for further information about the known referent (machine), namely its identity, like in the previous example. An answer to the question such as *machine 4* refers to this known machine, the one with the property that Claire did not use it. Therefore, this context, which voids intervention effects, also entails the answer to the question, as is shown in (21).

(21) context: Claire did not use [a specific machine]$_i$

    entails

 answer: Claire did not use [machine 4]$_i$

The question can therefore be paraphrased as in (22).

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[41] In spoken French, *quelle(s) machine(s)* can also have a plural reference, as the plural marking *s* is not audible. One could also assume that the coach leaves in the middle whether the cardinality of a specific set of machines is one or more than one, in which case the phrase *quelle(s) machine(s)* is number neutral.

(22) The machine that you did not use – which is it?

I will now discuss two examples in which the context does not void intervention effects, to clarify the contextual property that is responsible for the effect. The first example is presented in (23).

(23) Tom is the family globe trotter. He travelled all around the world for more than 20 years. During a family supper, his curious niece presents him a map of the world, with a list of names of all the countries in the world. She asks him:

> ??Tonton Tom, t'   es *pas* allé   où ?
>   uncle   Tom you are not gone where
>   Intended: 'Uncle Tom, where didn't you go?'

[Baunaz 2016: 155, ex. 36a]

While the context in (17) above makes salient a specific defendant who has been accused by all the witnesses and the one in (20) a specific machine that Claire did not use, the context in (23) does not establish the existence of specific places that uncle Tom did not visit. What the context makes salient is that uncle Tom visited many places all over the world, but the intervener *pas* 'not' does not feature in the context. As a result, there is no referent in the preceding discourse corresponding to 'the countries where uncle Tom did not go'. Therefore the context does not entail the answer to the question and the question cannot be paraphrased as in (24).

(24) The countries where you did not go – what are they?

This example shows that the intervener itself must be present in the context, cf. Engdahl (2006) and Beyssade (2006).

A second example in which the context does not void intervention effects was presented in (16) and is repeated as (25).

(25) During the end-of-year party, various prizes were awarded to the best
      students: maths, English, French, physics, etc. This year, all the
      students got a prize. After the party, the dean's wife asks her
      husband:

      *Tous les étudiants ont   reçu   quoi / quel   prix ?
       all   the students have received what which prize
       Intended: 'What/which prize did all the students receive?'

                                    [adapted from Baunaz 2016: 156, ex. 39b]

The context in (25) does mention the intervener *tous les étudiants* 'all the
students', but the *wh*-in-situ question is not acceptable on the relevant
scope reading, so this is clearly not the only requirement. The problem
seems to be that the context does not entail the answer to the question
because the scope is wrong. The context mentions a set of prizes (maths,
English, etc.) and makes salient that all the students got a (different)
prize. Yet, there is not a specific prize mentioned in the context that is
such that all the students received it. As a result, the context does not
entail the answer to the question and the question cannot be paraphrased
as in (26).

(26) The prize that all the students received – what/which one is it?

    I therefore propose that a context that voids intervention effects is
one that entails the answer to the question. For this to be the case, the
context should establish the existence of a specific referent for the *wh*-
phrase, cf. Baunaz's specificity. (Note that Baunaz's partitivity does not
play any role here.) Importantly, the context must make salient the
existence of a specific referent *with the property* as mentioned in the
question, e.g. a person with the property of having been recognized by all
the witnesses in (17). The property crucially includes the intervener (in
the right scope configuration).
    I phrase this generalisation regarding the contexts that void
intervention effects in terms of the information structure of the question.
More specifically, I employ Büring's (2016) 'givenness', which was

introduced in Section 1.3 of Chapter 3. In example (27), *the singer* is given, because the referent 'Frank Sinatra' is contextually salient.

(27) Sinatra's reputation among industry musicians grew swiftly, and
      James always supPORted [the singer]ᴳ.

                                                    [Büring 2016: 18, ex. 1]

Chapter 3 presented the definition of givenness in (28).

(28) An expression is given if (following existential type shifting)
      there is a CSM that entails it.

Recall that *CSM* stands for 'Contextually Salient Meaning', in other words, a meaning that is salient in the context, like 'Frank Sinatra' in (27). The notion of existential type shifting is not relevant for the present purpose, as I will only be dealing with propositions.[42] My definition of a CSM, as presented in Section 1.4 of Chapter 3, is given in (29).

(29) *Contextually Salient Meaning (CSM) – my definition*
      A meaning is a CSM if it is perceived by the speaker as contextually salient and the speaker has no reason to believe that it is not salient for the addressee.

This states that a CSM is a subjective notion: a CSM is what the speaker perceives as contextually salient. Therefore, as I explained in Chapter 3, a context may also make certain associations salient. Still, the interlocutor is also relevant, as the speaker should have no reason to believe that the CSM is not salient for the addressee.

The generalisation I propose regarding French *wh*-in-situ questions is that intervention effects are voided when the entire *wh*-in-situ question is

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[42] Existential type shifting turns expressions which are not propositions, into propositions. This is needed because entailment is a relation between two propositions, yet expressions of any type can be given.

given. I call this 'Maximally Given'. This 'Intervention effects avoidance generalisation' is presented in (30).

(30) *Intervention effects avoidance generalisation*
    Intervention effects are voided when the *wh*-in-situ question is
    Maximally Given.

The generalisation in (30) states that intervention effects are voided when the *wh*-in-situ question is Maximally Given, i.e., when a CSM entails the entire *wh*-in-situ question (cf. (28) above). Yet, entailment is a relation between propositions. A *wh*-question is not a proposition, but a set of propositions (Hamblin 1973). So, when does a CSM entail the meaning of a *wh*-in-situ question? I assume that a *wh*-question is entailed if the answer to the question is entailed. I therefore define Maximal Givenness as in (31).

(31) *Maximal Givenness*
    A *wh*-in-situ question is Maximally Given if a Contextually Salient
    Meaning (CSM) entails the answer to the question.

For instance, I mentioned above that the context must make salient the existence of a specific referent as determined in the question; that is the relevant CSM. In (17) above, the CSM is therefore 'a specific defendant has been accused unanimously by all the witnesses'. As was shown in (18), this entails the answer to the question, e.g. 'all the witnesses recognized defendant number 1', if the specific defendant in the context and defendant number 1 have the same reference. As there is a CSM that entails the answer to the question, the *wh*-in-situ question is Maximally Given, which I suggest is what voids intervention effects. The possibility to paraphrase the *wh*-in-situ question using a definite description corresponding to a contextually given referent, as in (19) above, can be used as a convenient test to establish Maximal Givenness. In other words, the *wh*-in-situ question in (17) is Maximally Given because there is a CSM that entails the answer to it, which is conveniently tested by paraphrasing the question using a definite description as in (19). According to the

Intervention effects avoidance generalisation in (30), intervention effects are voided in precisely such a context.

While the Intervention effects avoidance generalisation resembles specificity as proposed by Starke (2001) and Baunaz (2005; 2011; 2016), it should be noted that Maximal Givenness is a property of the *wh*-in-situ question as a whole (its information structure), rather than just the *wh*-phrase (its feature composition). Moreover, I do not assume a hierarchy of *wh*-phrases and interveners; partitivity does not play a role. It is not the combination of the *wh*-phrase and the intervener that determines if intervention effects arise (Relativized Minimality). Rather, an intervener is always an intervener. In the next section, I propose that the type of context that voids intervention effects relates to an alternative for covert movement.

5   Proposed explanation: a contextually supplied choice function

Why are intervention effects voided when the *wh*-in-situ question is Maximally Given (RQ2)? In a nutshell, the explanation I propose is as follows. Recall from Section 1 my assumption that intervention effects arise when an intervener blocks covert movement of the *wh*-phrase. I suggest that when a French *wh*-in-situ question is Maximally Given and does not display intervention effects, there is an alternative to covert movement. That is, rather than via covert movement, the in-situ *wh*-phrase is interpreted via a contextually supplied choice function (cf. Kratzer 1998 for specific indefinites). As there is no covert movement, intervention effects do not arise. I suggest that the choice function is only available when the question is Maximally Given because Maximal Givenness makes the choice function recoverable for the interlocutor. The representation with a choice function is displayed in (32), where I use the question in (17) above as an example.

(32) Representation of a Maximally Given *wh*-in-situ question
      ex. *tous les témoins ont reconnu qui* in (17)

      [[tous les témoins ont reconnu qui]]=
      {p | p = all the witnesses have recognized CH(person)}

The representation in (32) displays a singleton-set of propositions, in which the in-situ *wh*-phrase is represented by a choice function *CH*, which ranges over the set of persons (corresponding to the *wh*-phrase *qui* 'who'). I assume that a *wh*-question contains a question operator in CP, which turns the meaning of the IP it combines with into a singleton-set containing this meaning, cf. Heim's (2000) interpretation of Karttunen (1977). Taking (32) as an example, the question operator turns the proposition in (33a) into the set containing that proposition in (33b).

(33) a. 'all the witnesses have recognized CH(person)'
      b. {p | p = all the witnesses have recognized CH(person)}

The choice function I assume is a variable that is not bound by an existential quantifier; rather, its value is supplied by the context (cf. Kratzer 1998). The context in (17) mentions a specific person (defendant) who has been accused unanimously. This makes the choice function variable in (32, 33) recoverable. The fact that the context supplies a value for the choice function is a condition on its use. Only then, the interlocutor is able to identify the referent for the *wh*-phrase. In what follows, I explain the proposal in more detail. I elaborate on Kratzer's (1998) contextually supplied choice function, the relation I assume with Maximal Givenness and the fact that a question escaping intervention effects has a non-standard meaning.

A choice function is a function that applies to a non-empty set and yields an individual member of the set (Reinhart 1998; Winter 1997). Reinhart (1998) introduces the idea that a choice function can be used to interpret an in-situ *wh*-phrase. For instance, an in-situ *wh*-phrase like *which book* can be represented by a choice function that applies to the set of books and selects one book. The same representation is assumed for *wh*-phrases where the restriction is implicit, like *who*. A choice function

denoting *who* applies to the set of persons and selects one person from the set.

The choice function variable proposed by Reinhart (1998) is bound by an existential operator. In contrast, the interpretation of the choice function variable assumed by Kratzer (1998) is supplied by the context (see Kratzer (1998) for a choice function analysis of specific indefinites like *a certain* and *some*). In Kratzer's proposal, the choice function is a free variable and the context of use determines its value, as in the case of an unbound pronoun.[43]

In the case of an unbound pronoun like *she* in *She has just arrived*, the contextually supplied value should be recoverable for the interlocutor as well as the speaker (Breheny 2003; see also Yanovich 2005). If the interlocutor cannot identify this value, the communication fails. Under my proposal, the same is true for the choice function variable that represents an in-situ *wh*-phrase. If the speaker can identify the referent but the interlocutor cannot, the communication will fail, as the interlocutor will not be able to provide an answer to the question. The difference between my proposal and the case of unbound pronouns stems from the assumed presence of a question operator. As I mentioned above, I assume that a question operator (which is also present in other *wh*-questions) turns the simple proposition in (33a) into the singleton-set of propositions in (33b), thus yielding a question interpretation. Crucially, I assume that the reason why the choice function is only available in questions that are Maximally Given is that the interlocutor must be able to identify the contextually supplied value. Maximal Givenness is what

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[43] Kratzer's (1998) contextually supplied choice function has been criticised by Breheny (2003) and Yanovich (2005), but this mainly concerns the implicit argument that Kratzer uses to take care of specific indefinites like *a certain*. Yet, my proposal here does not employ this implicit argument. The implicit argument is used by Kratzer (1998) to model the intuition that a phrase like *a certain woman* refers to the woman that the speaker has in mind. She suggests that the implicit argument may refer to the speaker. Breheny (2003) and Yanovich (2005) argue that the intuition concerning *a certain* cannot be modelled in this way. In my proposal, the referent for the in-situ *wh*-phrase should be known to both speaker and interlocutor, as in the case of an unbound pronoun, contrasting with a specific indefinite like *a certain*.

makes the referent for the in-situ *wh*-phrase recoverable for the interlocutor. Consider again the question in the context in (17), repeated here as (34).

(34) During a trial, witnesses and defendants are confronted. One of the defendants has been accused unanimously. The journalist asks:

Et *tous les témoins* ont reconnu qui ?
and all the witnesses have recognized who
'And whom did all the witnesses recognize?'

[Baunaz 2016: 157, ex. 40b]

The context in (34) introduces a specific referent corresponding to a 'person whom all the witnesses recognized'. This provides the information needed to interpret the contextually bound choice function, which yields this same referent when applied to the set of persons. The interlocutor is therefore able to identify the referent for the *wh*-phrase. Yet suppose that the context would only provide the information in the first sentence (i.e. up until *confronted*). The context would then make salient the existence of several persons: witnesses, defendants and by implication other people involved in a trial, like a judge. Under such a context, it is not so clear what value the choice function takes and *CH*(*person*) cannot be identified. As the choice function interpretation is not available, covert movement is needed. This yields the intervention effects configuration, so the question becomes infelicitous. I therefore suggest that if the question is not Maximally Given, the context cannot supply an unambiguous value for the choice function and the choice function is not recoverable for the interlocutor in that context.[44]

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[44] In a context that makes salient *Nobody admired anyone*, an answer like *Nobody admired Jean* is entailed. However, in such a context, a choice function would still not be recoverable, as the relevant referent is not identifiable. This shows that Maximal Givenness is a necessary but not a sufficient condition for recoverability of a choice function in downward entailing contexts.

The meaning of a *wh*-question is normally a set of alternative propositions (Hamblin 1973). In case of (covert) *wh*-movement, the trace that is left behind by the moved *wh*-phrase can be interpreted as a variable. It is bound by the moved *wh*-phrase, which existentially binds the variable. The alternatives in the set arise from different values that can be attributed to the variable (cf. Karttunen 1977). Yet, I have suggested that in questions containing the choice function, there is no (covert) movement. So how does the meaning of a set of alternatives come about?

In fact, as predicted by the absence of covert movement, the meaning of a Maximally Given question does not yield alternatives. The referent for the *wh*-phrase is fixed. In (34), it is the particular defendant who has been recognized by all the witnesses. The question does not ask what person (out of a set of alternatives) was recognized by all the witnesses, which would result in a set of alternative answers. Instead, the question asks for more information about the identity of the given referent, in this case the person who has been recognized. The meaning of a question like (33) is therefore different from that of a regular *wh*-question.

In Section 4 above, I mentioned that the potential answers to a question like (33) are definite descriptions of the same referent. For instance, the potential answers listed in (18), repeated here as (35), refer to the same defendant.

(35) context: [a specific defendant]$_i$ has been accused unanimously,
              i.e. by all the witnesses

      entails

  answer: all the witnesses recognized [monsieur Bisset]$_i$ or
          all the witnesses recognized [defendant number 1]$_i$ or
          all the witnesses recognized [the defendant on the left]$_i$

These different ways to refer to one referent should be distinguished from the set of possible answers in a regular *wh*-question. In a regular *wh*-question like *whom did all the witnesses recognize?*, the set of possible answers is as in (36). This is a set of alternative propositions, which features a different referent in each answer.

(36) {p | p = all the witnesses recognized defendant number 1,
      all the witnesses recognized defendant number 2,
      all the witnesses recognized defendant number 3, ...}

Note that each of the answers listed in (36) might also receive alternative wordings. The fact that there are multiple ways to formulate an alternative in the set is a separate issue and in this dissertation, I do not deal with the status of these possible variants. The point I wish to make is that since the answers in (35) refer to the same referent, the denotation of the question in (33) should be seen as a singleton-set, a set containing only one proposition, which contrasts with a set of alternative propositions as in (36). The denotation of a singleton-set of propositions corresponds to the non-standard interpretation of a question as in (33). It still contrasts with the denotation of a declarative in that (33) denotes a set rather than a simple proposition. As explained above, I assume that the difference is due to the presence of a question operator, which is not present in a declarative.

The lack of covert movement thus explains the non-standard interpretation of a Maximally Given *wh*-in-situ question. Since there is no movement that creates alternatives, the meaning of a *wh*-in-situ question that contains an intervener is a singleton-set of one proposition. This is in accordance with the contexts in which it can be used, which need to make the *wh*-in situ question Maximally Given.

Summarising this section, I adopt Kratzer's (1998) contextually supplied choice function and apply it to *wh*-in-situ questions. When the choice function is present, there is no covert movement and intervention effects do not arise. I suggest that the choice function is only available when the question is Maximally Given because Maximal Givenness is what licenses recoverability of the choice function. That is, Maximal Givenness makes the choice function, and hence the referent for the *wh*-phrase, recoverable for the interlocutor. As choice functions do not yield alternatives, a Maximally Given *wh*-question does not involve alternative propositions. This prediction seems to be born out, as evidenced by the non-standard question interpretation.

6 Explained data variation

I now turn to the final research question (RQ3), the question what data variation Maximal Givenness can account for. I discuss in this respect variation among interveners (Section 6.1) and variation among sentences with the same intervener (Section 6.2).

6.1 Variation among interveners

The first type of variation that can be explained by Maximal Givenness is variation among interveners. Recall from Section 3 that Baunaz (2005; 2011; 2016), building on Starke (2001), accounts for this variation by assuming differences in the interveners' feature compositions. Baunaz assumes a hierarchy of interveners, namely specific, partitive and non-presuppositional. In this section, I firstly discuss the examples that Baunaz offers in support of the idea that the interveners *tous les N* 'all the N', *chacun des N* 'each of the N' and *pas* 'not' belong to three different classes, which are the interveners she discusses most elaborately.[45] I then show how Maximal Givenness can account for the same data without assuming the existence of these classes. Secondly, I lay out how variation among interveners is explained by Maximal Givenness.

Baunaz suggests that the universal quantifiers *tous les N* 'all the N' and *chacun des N* 'each of the N' display different properties, e.g., they are felicitous in different contexts (i.e. in declaratives) (Baunaz 2011; 2016). According to her, this is because *tous les N* 'all the N' is partitive and *chacun des N* 'each of the N' is specific. Baunaz's argumentation for the idea that the interveners *tous les N* 'all the N', *chacun des N* 'each of the N' and *pas* 'not' belong to three different classes of interveners then proceeds as follows.

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[45] According to Baunaz (2011), *personne* 'nobody' and *aucun des N* 'none of the N' are the negative counterparts of *tous les N* 'all the N' and *chacun des N* 'each of the N' respectively. She discusses these interveners too.

1. There is a contrast between *tous les N* 'all the N' as an intervener and *pas* 'not'. The context in (20), repeated here as (37), and the one in (16), repeated as (38), both license a partitive *wh*-phrase. While a question with *pas* 'not' is acceptable in a partitive context (37), a question with *tous les N* 'all the N' is not (38). Therefore, *pas* 'not' is a non-presuppositional intervener, in contrast to *tous les N* 'all the N'.

2. The intervener *tous les N* 'all the N' is however acceptable in a context that licenses a specific *wh*-phrase (39a), which confirms that it is a partitive intervener.

3. Yet the intervener *chacun des N* 'each of the N' is unacceptable in a context licensing a specific *wh*-phrase (39b), which confirms that it is a specific intervener, i.e. in contrast to *tous les N* 'all the N'.

(37) Claire is a regular at Rainbow gym. She goes there 3 times a week. As it is usually the case in these infrastructures, she has a coach. Her coach usually prepares a plan for the day, i.e., she needs to use all the machines listed. That day Claire is a bit tired and she practices slower than usual. At the end of the session, she goes to the coach and tells him that <u>she could not use all the machines</u>. The coach, who wanted to prepare the next session is a bit angry. He asks:

Bon, t'   as   *pas* utilisé quelle machine ?
well you have not   used   which machine
'Well, which machine didn't you use?'

<div align="right">[Baunaz 2016: 154-155, ex. 35, underlining mine]</div>

(38) During the end-of-year party, various prizes were awarded to the best students: maths, English, French, physics, etc. This year, all the students got a prize. After the party, the dean's wife asks her husband:

*_Tous les étudiants_ ont   reçu   quoi / quel   prix ?
all   the students have received what which prize
Intended: 'What/which prize did all the students receive?'

[adapted from Baunaz 2016: 156, ex. 39b]

(39) During a trial, witnesses and defendants are confronted. One of the defendants has been accused unanimously. The journalist asks:

a. Et   _tous les témoins_   ont   reconnu   qui ?
   and all   the witnesses have recognized who
   'And whom did all the witnesses recognize?'

b. *Et _chacun des   témoins_   a   reconnu   qui ?
   and each   of.the witnesses has recognized whom
   Intended: 'And whom did each of the witnesses recognize?'
   (with wide scope of the _wh_-phrase)

[Baunaz 2016: 157, ex. 40]

However, under the proposal presented above, each of these examples can receive an alternative explanation that does not require the assumption of three different classes of interveners. To start with step 1., the contrast between examples (37) and (38) can be attributed to the fact that the context in (37) makes the _wh_-in-situ question Maximally Given, while the context in (38) does not, as demonstrated in Section 4 (examples (21) and (22) versus (26)). Turning to step 2. in Baunaz's argumentation, the sentence with _tous les N_ 'all the N' in (39a) is Maximally Given in that context. This has been demonstrated above in (18) and (19). As to step 3., the fact that the sentence with _chacun des N_ 'each of the N' is not acceptable in this context can be explained by the distributive meaning of _chacun des N_ 'each of the N', as discussed by Gil (1995) and by Junker (1995: 145-146) for French. Since _chacun des N_ 'each of

the N' is strongly distributive, the use of *chacun des N* 'each of the N' in
(39b) expresses that the event of recognizing a defendant happened
separately for each witness, rather than for the group of witnesses. This
enforces a reading of the sentence in which *chacun des N* 'each of the N'
takes scope over the *wh*-phrase: 'For each of the witnesses, whom did s/he
recognize?' The collective reading 'Whom (one person) did the witnesses
as a group recognize', i.e. *unanimously*, is not available due to the meaning
of *chacun des N* 'each of the N'. I suggest that this distributive property of
chacun des N 'each of the N' is what causes the contrast in (39). In sum,
the examples in Baunaz (2005; 2011; 2016) do not make it necessary to
assume three different classes of potential interveners. This follows from
Maximal Givenness in combination with independently motivated
properties of *chacun des N* 'each of the N'.

I now lay out how Maximal Givenness can help us understand
variation among interveners. The context that comes to mind upon
reading a sentence depends on the sentence and an intervener is of
course part of the sentence. Crucially, for some interveners it is much
easier to envisage a context that makes the sentence Maximally Given
than for others.

An example of an intervener where this is relatively easy is *plusieurs N*
'several N'. The sentence in (40) with this intervener was judged
acceptable (Adli 2006). (Adli mentions that the sentence was presented
with context, but does not report on the context itself.)

(40) *Plusieurs chênes* ont   été   coupé où ?
       several   oaks   have been cut   where
       'Where have several oaks been cut?'

                                                          [Adli 2006: 180, ex. 16a]

In order to make (40) Maximally Given, the context must make salient
that there is a specific place where several oak trees have been felled. The
speaker then inquires where this place is. It is not so hard to imagine such
a context, because the intervener *plusieurs N* 'several N' has a very general
meaning. If it is salient that oak trees have been felled at a specific place,

it is already almost salient that *several* oak trees have been felled at that place.

In contrast to *plusieurs N* 'several N', it is harder to construe a context that makes a sentence with *plus de cinq N* 'more than five N' Maximally Given. The example in (41) was judged to be infelicitous (Mathieu 2002).

(41) **Plus   de   cinq étudiants* ont   fait   quoi ?
      more than five students   have done what
      Intended: 'What did more than five students do?'

[Mathieu 2002: 82, ex. 77a]

For (41) to be Maximally Given, the context must make salient that there is a particular thing that more than five students have done. It is not straightforward to come up with such a context, as *plus de cinq N* 'more than five N' imposes quite a specific restriction on the context. A context that makes salient that 'six' or 'part of the' students have done a specific thing does not make (41) Maximally Given. I suggest that (41) is judged to be unacceptable because it is difficult to envisage the necessary context. Nonetheless, a question with *plus de cinq N* 'more than five N' can be made felicitous given an appropriate context. Native speakers I consulted found the example in (42) perfectly acceptable.[46]

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[46] I would like to thank Romane Pedro and Marie Pedro for helping me to construct the relevant examples in French and to contact other native speakers.

(42) Une nouvelle réglementation stipule qu'un cours ne peut avoir lieu
      que si plus de cinq étudiants y sont inscrits. Résultat, il n'y a qu'un
      des cours de linguistique qui pourra avoir lieu.

      'A new regulation states that a course can only take place if more
      than five students have registered. Now only one linguistics course
      can go ahead.'

      C'   est tellement dommage, mais alors
      That is such   pity   but then
      'That is such a pity. But

      plus de   cinq étudiants se   sont inscrits   à   quel   cours ?
      more than five students REFL   are registered   at which course
      for which course did more than five students register?'

Similarly, it is more difficult to envisage a context that makes a question
with *ne ... que* 'only' Maximally Given. Yet, according to judgments by
native speakers, even a *wh*-in-situ question with the focus expression *ne ...
que* 'only' can be acceptable (43).[47] (The intended reading of (43) is that at
the events at the end of the year, they did not speak to other people than
Suzanne.)

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[47] It seems that something special is going on with *seulement* 'only'. According to the
native speakers I consulted, a *wh*-in-situ question with this intervener is also better in a
context that makes it Maximally Given, but it is still not acceptable.

(43) Pierre, Paul et Jean sont tous allés au lycée ensemble. À la fin de l'année, chacun d'eux n'a parlé qu'à Suzanne. Pierre l'a croisé pendant les examens, Paul lui a parlé lors de la remise des diplômes.

'Pierre, Paul and Jean all went to secondary school together. At the end of the school year, each of them only spoke to Suzanne. Pierre met her during the exam period, Paul spoke to her at the graduation ceremony.'

Et	Jean,
and	Jean
'And Jean,

il	*n*'	a	parlé	*qu*'	à	Suzanne	dans quelles circonstances ?
he	NE	has	spoken	only	to	Suzanne	in what circumstances

in what circumstances did he only speak to Suzanne?'

In short, a *wh*-in-situ question with an intervener can be felicitous if one is able to envisage the right context, but this is harder for some interveners than for others. If the necessary context is not easily available, the sentence becomes unacceptable.[48]

6.2   Variation regarding the same intervener

Maximal Givenness also sheds light on the variation among sentences with the same intervener, as other aspects of the sentence meaning also affect how easily one can envisage the necessary context. Even if two sentences are identical and they are also presented in identical contexts,

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[48] Note that other factors may also influence the relevant judgements. Example (i), cf. (43), was judged more acceptable by my informants than (ii).
  (i) Jean *n*'a parlé *qu*'à Suzanne dans quelles circonstances ?
  (ii) Jean *n*'a parlé *qu*'à Suzanne où ?
     'In what circumstances/where did Jean only speak to Suzanne?'
This relates to the prosodic constraints or strategies that were discussed in Section 4.2 of Chapter 2, which seem to make the sentence with the longer *wh*-phrase more natural.

variation may arise in contexts that allow for more than one interpretation.

All sorts of subtle differences between sentences can affect how easy it is to construe the context that is needed. Compare the sentences in (44), in which only the predicates differ, but even the meanings of these predicates are closely related.

(44) a. Elle ne mange   *pas* quoi, ta   fille ?
     b. *Elle ne goûte   *pas* quoi, ta   fille ?
        she NE eats/tastes not   what your daughter
        'What doesn't your daughter eat/taste?'

[adapted from Engdahl 2006: 100, ex. 23]

I suggest that it is easier to construe a context that would make the sentence Maximally Given for (44a) than for (44b). To make (44a) Maximally Given, the context must make salient that there are one or more specific things that the interlocutor's daughter does not eat. The fact that this is so easy to imagine is also related to world knowledge. Most children have one or more things that they do not eat, not one or more things that they do not taste (in the sense of 'try'). Moreover, native speakers I consulted report that changing the tense in (44b) markedly improves the sentence, indicating that tense can make a difference (44c).

   c. Elle n' a   *pas* goûté quoi, ta   fille?
      she NE has not   tasted what your daughter
      'What didn't your daughter taste?'

Even if sentences are presented in identical contexts, some variation may arise if the context allows for more than one interpretation. Take the context in (45), adapted from Engdahl's (2006) example in (12) above. I would call the necessary CSM in this example 'semi-salient'.

(45) *Semi-salient*

Anne has two children, a son and a daughter. They are both rather picky about what they eat. Anne mentions that her son doesn't eat fish. Her friend asks:

Et	ta	fille,	elle	ne	mange	*pas*	quoi ?
and	your	daughter	she	NE	eats	not	what

'And your daughter, what doesn't she eat?'

[cf. Engdahl 2006: 100, ex. 23]

Does the remark that both children are *rather picky* establish that there is a specific thing that Anne's daughter does not eat (at all)? That seems to be open to interpretation. Possibly, by analogy with the son, the daughter also has a specific type of food that she does not eat. Yet, the daughter could also just be generally fussy about her food.

One can strengthen the context in (45) so that it leaves no more room for an alternative interpretation (46).

(46) *Salient*

Anne has three children, two sons and a daughter. She has a rule at home according to which each child is allowed to have one type of vegetable that they do not eat. Anne mentions that her oldest son doesn't eat cabbage and her youngest son doesn't eat sprouts. Her friend asks:

Et	ta	fille,	elle	ne	mange	*pas*	quoi ?
and	your	daughter	she	NE	eats	not	what

'And your daughter, what doesn't she eat?'

In (46), I added a child, which strengthens the sense of analogy. Moreover, it is made explicit that each child has the relevant property of not eating a specific thing (mentioning the intervener). I also made the contextual restriction of the *wh*-phrase more specific: vegetables instead of food items in general. All these elements seem to help to make it very salient that there is a specific type of vegetable that Anne's daughter does not eat.

I have shown above that while a context may make the relevant meaning salient without question, a context may also do so depending on the interpretation of the speaker, predicting speaker variation. The interpretation of a speaker may even be different at different points in time, leading to variation in judgments by the same speaker. This variation is predicted when a context leaves some things unspecified, rendering it compatible with more than one situation (as imagined by the speaker). Recall also that a speaker's associations may influence what a context makes salient for him/her (see Chapter 3 for discussion). For example, my beliefs about and experiences with children may influence what the context in (44) makes salient for me. Finally, note that a speaker can always construe more (details of the) context herself; such additional context may then also differ among speakers. In other words, in addition to variation among interveners, Maximal Givenness also explains variation among sentences with the same intervener, even given an identical context. All these aspects of the sentence content affect how easy or difficult it is to construe the necessary context.

7   Echo questions

In Section 6, I laid out several types of data variation that Maximal Givenness can account for. I will now discuss another type of variation that is not usually seen as such, namely the contrast between echo and information seeking questions.

In the literature regarding intervention effects in French *wh*-in-situ questions, echo questions systematically receive different judgments than information seeking questions. Authors regularly mention that a particular sentence that displays intervention effects would be acceptable as an echo question (Baunaz 2005; Beyssade 2006; Chang 1997; Cheng & Rooryck 2000; Engdahl 2006). This also concerns sentences with relatively uncontroversial interveners. For instance, (most) authors who discuss the interveners *personne* 'nobody' (47) and *seulement* 'only' (48) agree that they cause intervention effects in information seeking questions (Baunaz 2011; Beyssade 2006; Chang 1997; Cheng & Rooryck 2000; Engdahl 2006;

Hamlaoui 2010; Mathieu 1999; 2002; Zubizarreta 2003). Still, the sentences in (47) and (48) are judged to be acceptable as echo questions.

(47) *_Personne_ n' admire   qui ?
     nobody   NE admires who
     Intended: 'Whom does nobody admire?'
     Acceptable as: 'Nobody admires who? (e.g. I didn't hear you.)'

<div align="right">[adapted from Beyssade 2006: 182, ft]</div>

(48) *Il   lit   _seulement_ quoi ?
     he reads only   what
     Intended: 'What is the only thing that he reads?'
     Acceptable as: 'He only reads what? (e.g. I didn't hear you.)'

<div align="right">[Engdahl 2006: 104, ex. 35a]</div>

At the same time, there is no publication (to my knowledge) that reports on an echo question displaying intervention effects.

I would like to suggest that echo questions do not display intervention effects because the context that licenses the use of an echo question is such that it is always Maximally Given. (As I will lay out in Chapter 6, there are differences as well as similarities between echo questions and Maximally Given information seeking questions.) Artstein (2002) describes the necessary relation between an echo question and the utterance that precedes it. According to him, the use of an echo question is only felicitous if the echo question is in its entirety given. This is the case when the content of the previous utterance entails the content of the echo question. Artstein also mentions that assumptions on the part of the speaker may play a role in the entailment. This is practically identical to the definition of Maximal Givenness in (31).[49]

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[49] There is a difference between my definition of Maximal Givenness in (31) and the way in which Artstein describes givenness of an echo question. In particular, they differ in how they deal with the entailment of a meaning that is not a proposition but a _wh_-in-situ (echo) question. I proposed in (31) that a _wh_-in-situ question is Maximally Given if a CSM entails _the answer_ to the question. Artstein (2002: 102) mentions that the context must

I illustrate that an echo question is felicitous in a context that makes the sentence Maximally Given, using a French echo question containing an intervener. If (47) above is an echo question of the type expressing auditory failure, the preceding utterance would be something like in (49).

(49) A: Personne n' admire #####[noise].
         nobody   NE admires
         'Nobody admires #####[noise].'

   B: *Personne* n' admire qui ?
         nobody   NE admires who
         'Nobody admires who?'

Recall from the definition of Maximal Givenness in (31) that a *wh*-in-situ question is Maximally Given if a Contextually Salient Meaning (CSM) entails the answer to the question. In (49), it is salient for speaker B that speaker A said that a specific person is admired by nobody. Speaker A's utterance mentions such a person, but because of the noise, speaker B did not hear who the person was. The echo question therefore asks for specification of the referent mentioned by speaker A. Consequently, speaker A's utterance as perceived by speaker B entails the answer to the echo question, as is displayed in (50).

(50) context: You said that nobody admires [a specific person]$_i$

            entails

   answer: You said that nobody admires [Jean-Jacques]$_i$ or
            You said that nobody admires [my neighbour]$_i$ etc.

Consequently, the echo question in (49) can be paraphrased as in (51).

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entail "the proposition derived by treating the *wh*-phrase as an indefinite with its normal content (e.g. *who* must refer to a person) but without *wh* properties".

(51) The person of whom you said that nobody admires him/her
– who is it?

Hence, echo questions are always Maximally Given. I suggest that this is why they never display intervention effects.

Following the argumentation above, the context in which an echo question is uttered always licenses the use of a choice function. In turn, this predicts that echo questions involve a singleton-set of propositions. I return to this topic in Chapter 6.

8 Conclusions

I investigated in this chapter the influence of context on intervention effects. The research builds on work by Starke (2001) and Baunaz (2005; 2011; 2016), who note that intervention effects are voided in a particular type of context. I suggested that the effect of context also plays a role in judgments of sentences in isolation, as speakers are then free to envisage their own contexts, which may result in variation of judgments.

First, I investigated what characterizes a context that voids intervention effects. I proposed the 'Intervention effects avoidance generalisation', which states that a context that voids intervention effects makes the entire *wh*-in-situ question 'given' according to the framework of Büring (2016). I called this 'Maximally Given'. A *wh*-in-situ question is Maximally Given if a Contextually Salient Meaning (CSM) entails the answer to the question. For this to be the case, the context must establish the existence of a specific referent for the *wh*-phrase, i.e. with the property as mentioned in the question, crucially including the intervener. Of relevance is not only the context itself, but the speaker's perception of the context. When a *wh*-in-situ question is Maximally Given, it can be paraphrased using a definite description corresponding to a contextually given referent as in the examples above.

The chapter then considered why Maximal Givenness voids intervention effects. I proposed that when a *wh*-in-situ question is Maximally Given, a choice function is available. I assumed a contextually supplied choice function, cf. Kratzer (1998) for specific indefinites.

Following Kratzer, the choice function variable is free and the context determines its value. I suggested that the choice function is only available when the question is Maximally Given because Maximal Givenness makes the choice function recoverable for the interlocutor. As the choice function provides an alternative for covert *wh*-movement, the intervention effects configuration does not arise. The choice function also explains the non-standard interpretation of a Maximally Given *wh*-in-situ question. I assumed that (covert) *wh*-movement creates alternatives (cf. Karttunen 1977) and that a *wh*-question contains a question operator that turns a proposition into a set of propositions. Under these assumptions, a sentence with a question operator but without movement denotes a singleton-set of propositions, which is in line with the observed interpretation.

Finally, I examined what data variation the proposal can account for. I demonstrated that, like the previous proposal by Baunaz (2011; 2016), it can explain variation among different interveners. Yet, it explains the data without the need to assume the existence of three different classes of interveners or to stipulate the presence of features on them. In addition, the proposal accounts for variation among sentences with the same intervener, including identical sentences. In other words, it explains more of the observed variation. It also accounts for the absence of intervention effects in echo questions. In conclusion, the chapter shows that intervention effects in French *wh*-in-situ questions can be voided, as long as a context is construed that makes the question Maximally Given.

6 Two mechanisms to interpret *wh*-in-situ

1 Introduction

Chapter 5 investigated the role of context in intervention effects. It built on the observation that a sentence which displays intervention effects, like (1), may become acceptable given a particular type of context, as in (1') (Baunaz 2005; 2011; 2016; Starke 2001).

(1) **Tous les témoins*   ont   reconnu   qui ?
    all   the witnesses   have   recognized   who
    'Who did all the witnesses recognize?'

(1') During a trial, witnesses and defendants are confronted. One of the defendants has been accused unanimously. The journalist asks:

    Et *tous les témoins* ont reconnu qui ?

<div align="right">[Baunaz 2016: 157, ex. 40b]</div>

I assumed in Chapter 5 that in the unacceptable sentence in (1), the *wh*-phrase must move covertly to the left periphery and that an intervener like *tous les N* 'all the N' blocks covert movement of the *wh*-phrase, as shown in (2).

(2) [$_{CP}$ ... intervener ... *wh*-phrase]
                                  COVERT

I proposed that in a context that voids intervention effects (1'), the *wh*-in-situ question contains a contextually supplied choice function (cf. Kratzer (1998)), as displayed in (3).

(3) 〚tous les témoins ont reconnu qui 〛 =
      {p | p = all the witnesses have recognized CH(person)}

In (3), *CH(person)* represents the *wh*-phrase *qui* 'who'. The choice function ranges over the set of all relevant persons and selects one person from the set. As the use of a choice function forms an alternative for covert movement, the intervention effects configuration in (2) does not arise. I suggested in Chapter 5 that the use of a choice function requires a particular type of context (cf. (1')) because such a context makes the choice function recoverable for the interlocutor. The necessary context makes the *wh*-in-situ question 'Maximally Given' (entirely given in the sense of Büring (2016)), which is when a Contextually Salient Meaning (CSM) entails the answer to the question. I mentioned that when this is the case, the question can be paraphrased using a definite description corresponding to a contextually given referent as in (4).

(4) The defendant who has been recognized by all the witnesses
      – who is it?

Under my proposal, a choice function is only available if a French *wh*-in-situ question is Maximally Given (3); otherwise, covert movement is needed (2). I will refer to the questions interpreted via the two mechanisms as 'covert movement *wh*-in-situ' and 'choice function *wh*-in-situ' respectively (5).

(5) *French* wh-*in-situ questions interpreted via the two mechanisms*
      1. Covert movement *wh*-in-situ (cf. (2))
      2. Choice function *wh*-in-situ (cf. (3))

In this chapter, I extend the proposal that French has these two mechanisms to interpret *wh*-in-situ questions beyond intervention effects in two ways. First, I investigate several other properties of questions interpreted via the two mechanisms. I suggest that not all speakers avail themselves of both mechanisms. More specifically, some speakers have choice function *wh*-in-situ, but not covert movement *wh*-in-situ. Second, I

extend the proposal beyond French. I show that the choice function account is also a promising direction of research for contextually restricted *wh*-in-situ in *wh*-fronting languages like English and German. In particular, the chapter has the following goals:

(6) *Goals of the chapter*

G1. Explore the properties of the questions interpreted via the two mechanisms.

    a. Investigate the acceptability of *wh*-in-situ questions with a form like *You want a what?*, i.e. with an indefinite article, in a context that makes the question 'Maximally Given' as compared to (i) *wh*-in-situ in an out of the blue context and (ii) echo questions.

    b. Investigate the acceptability of *wh*-in-situ in an out of the blue context in indirect questions, inside a strong adjunct island and in long-distance questions.

    c. Account for the observed data variation regarding the extra-strong presupposition and the sentence-final rise, in addition to intervention effects.

G2. Show that the choice function account is also a promising direction of research for contextually restricted *wh*-in-situ in *wh*-fronting languages like English and German.

    a. Explore to what extent the properties of *wh*-in-situ questions in English and German resemble those of French choice function *wh*-in-situ.

    b. Compare the properties of *wh*-in-situ in English and German to those of echo questions.

The structure of the chapter is as follows. Section 2 reports on a rating study that compares the acceptability of French covert movement *wh*-in-situ, choice function *wh*-in-situ and echo questions with a form like *You want a what?*, i.e. with an indefinite article (G1a). The study shows that choice function *wh*-in-situ questions with this form are not generally accepted, but that they are rated higher than covert movement *wh*-in-situ

questions with the same form. French echo questions with this form are judged perfectly natural. The results provide more insight into the properties of choice function *wh*-in-situ and will be discussed in light of the claim that there are two types of *wh*-in-situ in French.

Subsequently, I return to the data variation described in Chapter 2 and re-investigate it from the perspective that French has two types of *wh*-in-situ. First, Section 3 reports on a second rating study that investigates the acceptability of *wh*-in-situ in an out of the blue context in indirect questions, inside a strong island and in long-distance questions (G1b). Under my proposal, such a context would exclude the use of a choice function and trigger covert movement. Then Section 4 discusses how the seemingly contradictory data regarding the extra-strong presupposition, the sentence-final rise and intervention effects (G1c) follow from the hypothesis that there are two types of speakers. Whereas some speakers only have the choice function option to interpret *wh*-in-situ, others have both options in (5).

Taking a cross-linguistic perspective, I then extend the idea of a contextually supplied choice function to test if it can also cover contextually restricted *wh*-in-situ in *wh*-fronting languages like English and German. Section 5 explores to what extent the properties of *wh*-in-situ in English and German resemble those of French choice function *wh*-in-situ (G2a). Section 6 compares *wh*-in-situ questions in English and German to echo questions. It shows that the two types of questions share part of their characteristics and makes several observations about echo questions (G2b).

Following a discussion in Section 7, Section 8 concludes with an overview of the established properties of French *wh*-in-situ questions interpreted via the two mechanisms.

2   *Wh*-in-situ with *des quoi*: a rating study

This section investigates the acceptability of choice function *wh*-in-situ with a form like *You want a what?*, i.e. with an indefinite article. The acceptability of such questions is compared to that of (a) covert movement *wh*-in-situ and (b) echo questions, with the same form (G1a).

As discussed in Section 2 of Chapter 3, a known property of echo questions (at least in English and German) is their ability to take a non-standard form as in (7a) (Bolinger 1987; Cooper 1983; Reis 1992). In the echo question in (7a), the *wh*-phrase only replaces part of the DP, as it is still preceded by the indefinite article. Other than in echo questions, questions with this form are generally assumed to be unacceptable. This is illustrated in (7b) for a *wh*-fronted question and in (7c) for an in-situ *wh*-phrase in a multiple question.

(7) a. A: John bought a #####[noise].
       B: John bought a WHAT? (I did not hear you.)

   b. *A what did John buy?
   c. *Who bought a what?

Yet, an example that I overheard in the Keukenhof (8) provides an indication that French choice function *wh*-in-situ may also occur with this form. The Keukenhof is a large flower garden in the Netherlands, which is visited by many tourists. The flower beds have signs displaying the names of the flowers.

(8) Two French ladies are visiting the Keukenhof. One of them, moving away from the other, walks towards a flower bed. She gets ready to bow over to look at the sign displaying the name of the flowers. Apparently thinking out loud, she says:

Ce   sont des   quoi alors ?
these are   INDF.ART.PL what so
'So what are these?'

The French word *des* is the plural indefinite article. The form *des quoi* 'DES what' is therefore the same as *a what* in English, albeit in the plural. The question in (8) seems to involve choice function *wh*-in-situ (it is clearly not an echo question). The example is less straightforward than the examples of choice function *wh*-in-situ in Chapter 5. In (8), the context does not establish such a clear referent for the *wh*-phrase as 'the

defendant who has been recognized by all the witnesses' ((1') and (4) above), about whom the *wh*-in-situ question requires further specification. Yet in (8), there is still a fixed referent for the *wh*-phrase. The French lady must have seen many types of flowers in the Keukenhof, accompanied by signs. This made salient for her that the flower bed in front of her also contains a particular type of flowers; she is wondering what this type of flowers is. Consequently, it is already salient for the French lady that there is a name of a specific type of flowers on the sign in front of her; her question asks for further specification of this known referent, i.e. the name on the sign. Like in the examples in Chapter 5, the question can therefore be paraphrased using a definite description, as in (9).

(9) The name of the flowers as mentioned on the sign – what is it?

As a result, the question in (8) can be interpreted as Maximally Given. Under the proposed analysis, the context therefore licenses the use of choice function *wh*-in-situ.

The indefinite article *des* also appears to be part of what is salient (the CSM) in (8). The French lady must have seen many types of flowers on her walk in the Keukenhof, such as *des tulipes* 'DES tulips', *des jacinthes* 'DES hyacinths' and *des jonquilles* 'DES daffodils'. This made salient for her that the flowers mentioned on the sign in front of her are also DES [name of the type of flowers mentioned on the sign], i.e. making the word *des* salient. This is to some extent similar to the echo question in (7a). In (7a), the indefinite article is more obviously part of what is salient, because it was mentioned in the preceding utterance. Yet in the question in (8), the *wh*-phrase is also preceded by the indefinite article, replacing only part of the DP.

The example in (8) raises the question of to what extent questions with *des quoi* 'DES what' are acceptable outside of echo questions, i.e. in choice function *wh*-in-situ. A related question, which is relevant for the distinction proposed in Chapter 5, is whether there is any difference in acceptability between choice function *wh*-in-situ and covert movement *wh*-in-situ questions with this form. In addition, the literature (I know of)

does not mention that echo questions with an indefinite article preceding the *wh*-phrase are acceptable in French. Although the expectation based on other languages is that they are, the rating study had yet to confirm this.

I set up a rating study with three conditions, which consisted of three types of context preceding a French *wh*-in-situ question (10).

(10) *Conditions/types of context*
    A. Out of the blue, avoiding Maximal Givenness
    B. Maximal Givenness (non-echoic)
    C. Echo question context

Under the proposed analysis, the context in Condition A should induce an interpretation via covert movement, as choice function *wh*-in-situ requires a context that makes the question Maximally Given. Covert movement *wh*-in-situ does not impose any specific restrictions on the context. It is therefore not ruled out that a covert movement *wh*-in-situ question is uttered in a context that makes it Maximally Given. However, my hypothesis regarding covert movement *wh*-in-situ was that it is infelicitous with *des quoi* 'DES what'; the main point of interest was whether questions with *des quoi* 'DES what' improve in a context that makes them Maximally Given (Condition B), i.e. a context that licenses the use of a choice function.

In the next sections, I present the materials (Section 3.1), procedure (Section 3.2), participants (Section 3.3), analysis (Section 3.4), results (Section 3.5) and discussion of the results (Section 3.6) of this study.

2.1 Materials

I used *wh*-in-situ questions of the form in (11).

(11) Tu   as   acheté des   quoi ?
     you have bought INDF.ART.PL what
     'You've bought some what?'

The *wh*-word *quoi* 'what' has the position of an NP rather than a DP in (11), as it follows the indefinite article. In French, the singular indefinite article is marked for gender: there is the form *un* 'a' for masculine and *une* 'a' for feminine nouns. To avoid this difference, I used a plural indefinite article, which always has the form *des*. There were fifteen target sentences, which were very similar in form. The subject was always *tu* 'you (informal)'. (French *wh*-in-situ is more commonly used in an informal register (Boucher 2010a; Myers 2007; Quillard 2000).) It was followed by a second person auxiliary and a participle. The *wh*-phrase *quoi* 'what' was the direct object and the final element in the sentence.

    The target sentences were preceded by a description of the conversational setting. It described whom the speaker of the sentence was talking to and in what context. It always ended with an equivalent of 'you say' or 'you ask' (followed by a ':'). (12) is an example of an item in an Out of the blue context (Condition A).

(12) *Out of the blue context* (*Condition A*)

    Tu décides de rendre visite à ta famille. Quand tu arrives, tes parents sont là mais ta sœur, Caroline, s'est absentée pour aller en ville. Quelques heures plus tard, elle rentre. Tu lui dis :

    Ah enfin tu es rentrée ! Alors, tu as acheté des quoi ?

    'You decide to visit your family. When you arrive, your parents are there, but your sister, Caroline, has left to go into town. She returns a few hours later. You say to her:

    Oh you're finally back! So what did you buy?
    (Lit: 'So, you've bought DES what?')'

The contexts were constructed to be natural and to indicate that the register is informal. They were written and checked by at least three

native speakers of French.[50] The contexts for the items were manipulated to create the three conditions.

In the Out of the blue context (Condition A), great care was taken to avoid Maximal Givenness. For instance, in (12) above, it is not mentioned in or implied by the context in any way that the sister went shopping or engaged in any buying activity. Though we cannot entirely control what becomes salient for a speaker in a particular context, the context that I constructed did not by itself make the content of the question salient. At the same time, the Out of the blue context still allowed for the existential implicature of *wh*-questions (see Section 1 of Chapter 1). In other words, it still made the assumption plausible that the addressee might have bought things.

In Condition B, the context was designed to make the *wh*-in-situ question including the indefinite article Maximally Given. In particular, the context first mentions that three people *all* have a certain property, mentioning the indefinite article *des*. For example, in (13), Charlotte, Marianne and Alice *ont toutes acheté des nouvelles chaussures* 'have all bought DES new shoes'. Then, mentioning the indefinite article twice more, this is specified for two of the three people. In (13), it is mentioned that Charlotte *a acheté des Converse* 'bought DES Converses' and Marianne *des Nike* 'DES Nikes'.

(13) *Maximal Givenness context* (*Condition B*)

C'est la saison des soldes. Tu tombes sur trois amies à toi, Charlotte, Marianne et Alice, qui sont allées en ville pour faire du shopping. Elles ont toutes acheté des nouvelles chaussures. Charlotte te dit qu'elle a acheté des Converse, Marianne des Nike. Tu te tournes vers Alice et lui demandes :

Et toi, tu as acheté des quoi ?

'It's the sales season. You run into three friends of yours, Charlotte, Marianne and Alice, who have gone into town to go shopping. They all bought a new pair of shoes. (Lit: 'They have all bought DES new shoes.') Charlotte tells you that she bought some Converses, Marianne that she bought some Nikes. (Lit: 'Charlotte says to you that she has bought DES Converses, Marianne DES Nikes.') You turn to Alice and ask her:

And what did YOU buy? (Lit: 'And you, you've bought DES what?')'

This is designed to make salient that the third person also bought DES [a specific brand of shoes]. The *wh*-in-situ question then asks what it is that she bought using the indefinite article *des*. The contrastive topic *et toi* 'and you' was added to increase the sense of analogy.

The contexts in Condition C were designed to trigger an echo question expressing auditory failure, as in (14).

(14) *Echo question context* (*Condition C*)

Tu es en train de partir de chez toi. Tu aperçois ton voisin, qui est un bon ami à toi, devant sa porte. Intrigué(e), tu regardes la grosse boîte qu'il a dans ses bras. Lorsqu'il voit que tu la regardes, il dit : « j'ai acheté des... (une voiture klaxonne) ». Puisque tu n'as pas entendu ce qu'il a dit à cause du klaxon, tu lui demandes :

Tu as acheté des quoi ?

'You are in the process of leaving your home. You notice your neighbour, who is a good friend of yours, in front of his door. Intrigued, you look at the big box he is holding. When he sees you looking, he says: "I've bought some (lit: DES) ... (a car honks)". As you didn't hear what he said because of the car horn, you ask:

You've bought some what? (Lit: 'You've bought DES what?')'

The context mentions another person's utterance, the relevant part of which is interrupted by a noise. This utterance contains the same verb as the target sentence and crucially the indefinite article *des*. Different noises featured in the context descriptions ('a dog barks', 'the phone rings' etc.), but the noise always covered the NP rather than the DP. The last sentence of the context made clear that the *wh*-in-situ question is asked *because* of the auditory failure.

The fifteen target sentences were presented in each of the three conditions/types of context, yielding 45 items. These were intermingled with 75 fillers. 45 of these were the items of the rating study I report in Section 4: the items of the two studies acted as fillers to each other. In addition, there were thirty fillers that were declaratives. Half of these were simply declaratives that ought to be felicitous (15), while the other half were designed to be comprehensible but infelicitous (16). The infelicitous sentences all contained a reversal of a noun (*taille* 'size') and a determiner (*une* 'a') and also an adjective that ought to precede the noun, but followed it (*petite* 'small').

(15) Tu as passé la journée avec ta cousine que tu ne vois pas souvent. Tes parents te demandent ce que vous avez fait. Tu leur parles de ce que vous avez acheté, puis tu leur dis :

On a mangé un éclair au chocolat.

'You spent the day with your cousin, whom you don't often see. Your parents ask you what the two of you did. You tell them about what you've bought, then you say:

We ate a chocolate éclair.'

(16) Un couple d'amis à toi va bientôt avoir un enfant. Tu décides donc d'acheter quelque chose pour leur bébé. Une fois rentrée chez toi, tu racontes à ton mari que tu as trouvé un cadeau pour le bébé de vos amis. Tu lui dis :

  *J'ai choisi taille une petite.
  Correct word order: *J'ai choisi une petite taille*.

  'A couple you are friends with is soon having a child. You therefore decide to buy something for their baby. When you are back home, you tell your husband that you've found a present for the baby of your friends. You say:

  I've chosen a small size.'

The declarative fillers had several purposes. They served to create some variation in the trials of *wh*-in-situ questions. More importantly, they were designed to encourage participants to use the whole scale in their rating of the sentences (see below). One half of the fillers were designed to be maximally natural (acceptable) and the other half was designed to be maximally unnatural (unacceptable). Another reason was to build in attention checks (cf. Oppenheimer et al. 2009). Attention checks are trials that are used to detect whether a participant is paying attention. If a participant would judge all declaratives in the middle of the scale, this would be grounds to exclude them from the results.

     The materials that were used in this study can be found in Appendix E.

2.2   Procedure

I created an online survey using Qualtrics survey software (Qualtrics 2019), which was distributed through Prolific (Prolific 2019).[51] It was

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explained via an instruction screen that the participants would be shown a series of French sentences, each preceded by a short description of the conversational setting. The participants were asked to judge how natural each sentence seemed to them in the context in which it appeared, according to their own personal intuition. I used the word 'natural' rather than 'acceptable' to avoid prescriptive reactions as much as possible. The instructions mentioned that the study concerned the type of French that is spoken in informal every day conversation. The participants were also requested to read the context descriptions very carefully. These instructions can be found (in French) in Appendix D.

Each subsequent screen presented one item or filler preceded by a context description. Participants were asked to indicate the naturalness of the sentence, i.e. the sentence following the context, by clicking on a continuous scale as in Figure 1 (cf. Chimi & Russell 2009).

Pas naturel   **Naturel**

Figure 1. Response format of the rating task

An advantage of this format is that a continuous scale is more finely granulated than for example a Likert scale with five or seven discrete points. A continuous scale also seems to fit well with the nature of acceptability judgment data, which form a continuum (Sprouse 2007; Sprouse & Almeida 2013). Upon presentation to a participant, the slider was situated in the middle of the scale. The respondent was required to move the slider before she could proceed to the next trial. (One could of course choose to move the slider back to the middle of the scale.) The position of the slider that was chosen corresponded to a position on a scale from 1.0 to 5.0, i.e. a 50-point scale. This underlying scale was not visible to the participants (cf. Figure 1). The screen also did not display the numeric value that was chosen (e.g. a rating of 4.2).

The participants were randomly assigned to three groups (A, B, C), each consisting of one third of the participants. Each group of participants was presented with part of the stimuli according to a Latin square design, as displayed in Table 1.

Table 1. Distribution of items over participants

GROUP	CONDITION A	CONDITION B	CONDITION C
Group A	items 1-5	items 6-10	items 11-15
Group B	items 6-10	items 11-15	items 1-5
Group C	items 11-15	items 1-5	items 6-10

In the same way, each group of participants was presented with one third of the items of the other rating study, which as I said acted as fillers. The declarative fillers were presented to all participants. This meant that each group of participants was presented with fifteen items, fifteen fillers from the other study and thirty declarative fillers, yielding sixty trials. These were presented in a randomised fashion, followed by a series of demographic questions.

2.3   Participants

64 monolingual native speakers of French, who were living in France at the time of testing, were reimbursed to participate in the rating study (36 male and 26 female). I targeted speakers of a limited age range to obtain a more homogeneous group, resulting in participants of 20-34 years old. None of them reported any language related disorders.

2.4   Analysis

I first ran a null model with the rating on the 50-point continuous scale (1.0 to 5.0) as the dependent variable and intercepts of items and participants as random factors. Adding the type of context/condition as a fixed factor significantly improved the model's fit ($p < 0.001$). The best fitting converging model turned out to be a linear mixed-effects model

with the rating as the dependent variable, type of context/condition as a fixed factor and slopes of items and intercepts of participants as random factors. Adding other fixed factors, like age, experimental group, time taken to complete the survey or sex did not improve the model. I used the *lmer* function of the *lme4* package (Bates et al. 2015) in R (R Core Team 2019). P-values were obtained using the package *lmerTest* (Kuznetsova et al. 2017).

I had to exclude one participant for the models to converge. The participant was selected based on trellis graphs, which showed a pattern for this participant that deviated from that of the other participants. Subsequent inspection of the best model showed that it suffered from outliers. I therefore removed all outliers with a standard residual of more than 2.5 standard deviations from zero, which was 2.2% of the data (41 outliers). The analysis was run for each reference category (Out of the blue, Maximal Givenness, Echo question context) to obtain all relevant comparisons. The results in the next section report the analyses for the remaining 63 participants.

2.5 Results

The results showed that there were clear differences between *wh*-in-situ questions with *des quoi* 'DES what' across the three conditions. All differences were highly significant, as is shown in Table 2.

Table 2. Results of a linear mixed-effects model
for the rating of *wh*-in-situ questions with *des quoi* 'DES what'

COMPARISON	β	SE	P
Condition B – Condition A	0.53	0.06	< 0.001
Condition C – Condition B	2.26	0.06	< 0.001
Condition C – Condition A	2.79	0.06	< 0.001

The mean rating of *wh*-in-situ questions with *des quoi* 'DES what' in the three conditions is displayed in Figure 2.
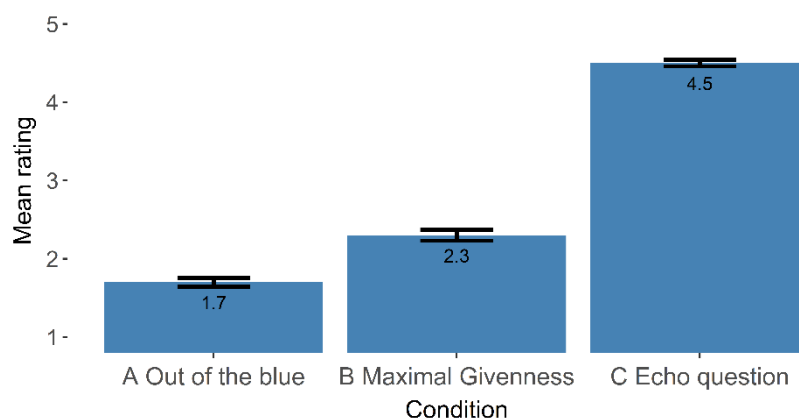
Figure 2. Mean rating of *wh*-in-situ questions
with *des quoi* 'DES what' in the three conditions

With a mean rating of 2.3, the questions were not judged to be very natural in the Maximal Givenness context. At the same time, they were judged significantly more natural in that context than in the Out of the blue context. In the echo question context, the questions were judged to be very natural: they received a mean rating of 4.5 on a scale from 1.0 to 5.0. The difference between this condition and the other two conditions was large.

The number of times that participants selected the ends of the scale, i.e. the ratings '1' and '5', also reflect the differences. These are displayed in Table 3.

Table 3. The number of times that questions received
the ratings '1' and '5' in each condition

CONDITION	*N*	*N* RATING '1'	*N* RATING '5'
Condition A Out of the blue	315	128	5
Condition B Maximal Givenness	315	66	15
Condition C Echo question	315	0	174

Figure 3 displays violin plots of the ratings' distributional pattern. The red area represents the distribution of the ratings in each condition and the boxplots also show the median and interquartile range.
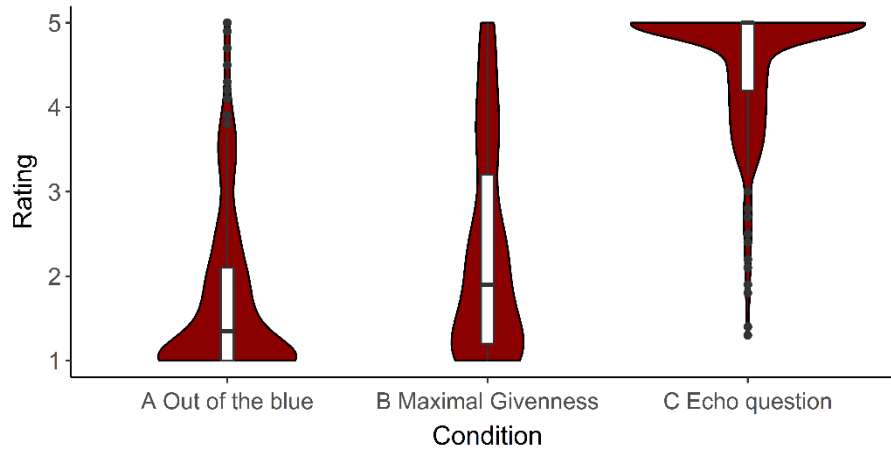

Figure 3. Violin plots with box plots of *wh*-in-situ questions with *des quoi* 'DES what' in the three conditions. The red areas and the boxplots in them display the distribution of the ratings.

In line with Table 3, the violin plots indicate that there was quite some variability regarding the ratings of sentences in a given condition.

2.6 Discussion of the results

The above results show that *wh*-in-situ questions with *des quoi* 'DES what' were not rated very highly in Condition B (Maximal Givenness). At the same time, such questions were rated significantly higher in a context that made them Maximally Given (Condition B) than in a context that did not (Condition A). The combination of these two results is not straightforward to interpret. Given the fact that the ratings in Conditions A and B differ from each other, why are the ratings in Condition B (Maximal Givenness) still so low? On the other hand, if questions in Condition B are not very good, why are they judged significantly higher (p < 0.001) than those in Condition A? When I informally discussed a few sentences with informants in preparation for the rating study, most of them rated questions similar to the ones in Condition B at '4' or '5' on a 5-

point scale. These informants were native speakers of French (non-linguists) in the same age group as the participants. I also presented one such sentence during a talk at the University of Nantes, where the audience also judged it to be acceptable. In what follows I will discuss two possible reasons for the relatively low ratings in Condition B (Maximal Givenness) as compared to the informal judgments of my informants.

One reason for the low ratings in Condition B may relate to the precise characteristics of the items and subtle differences between them. There were rather large differences between the ratings of items in Condition B; the median rating of each item is shown in Figure 4.
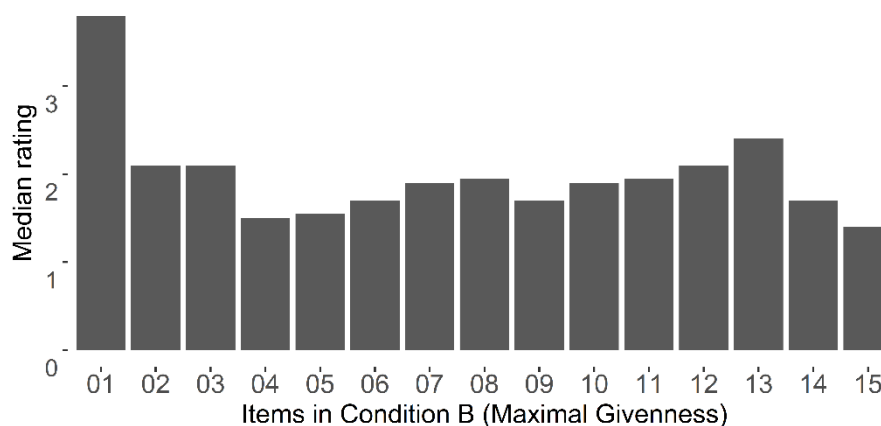
Figure 4. Median rating of the individual items
in Condition B (Maximal Givenness)

The item I presented during my talk at the University of Nantes was item 01 in this figure. As Figure 4 shows, this item also received a relatively high rating in the study: a median rating of 3.8.

The differences among the items' ratings may relate to their exact properties, in particular the degree to which the word *des*, the plural indefinite article, is made salient by the context. I discuss this in relation to item 01 in Figure 4. It was presented in example (13) above, repeated here for convenience.

(13 - Repeated)

> C'est la saison des soldes. Tu tombes sur trois amies à toi, Charlotte, Marianne et Alice, qui sont allées en ville pour faire du shopping. Elles ont toutes acheté des nouvelles chaussures. Charlotte te dit qu'elle a acheté des Converse, Marianne des Nike. Tu te tournes vers Alice et lui demandes :
>
> Et toi, tu as acheté des quoi ?
>
> 'It's the sales season. You run into three friends of yours, Charlotte, Marianne and Alice, who have gone into town to go shopping. They all bought a new pair of shoes. (Lit: 'They have all bought DES new shoes.') Charlotte tells you that she bought some Converses, Marianne that she bought some Nikes. (Lit: 'Charlotte says to you that she has bought DES Converses, Marianne DES Nikes.') You turn to Alice and ask her:
>
> And what did YOU buy? (Lit: 'And you, you've bought DES what?')'

Although all items in Condition B (Maximal Givenness) were designed to make the word *des* contextually salient (see Section 2.1), item 01 has a few properties that may have increased its contextual salience in comparison with the other items.

First, the concepts *des Converse* 'DES Converses' and *des Nike* 'DES Nikes' are very similar to each other. Their overarching category 'shoe brands' is very specific in comparison to for instance the overarching categories in items 05 and 15, which received relatively low median ratings. Item 05 mentions *des biscuits* 'DES biscuits' and *des fruits* 'DES fruits' as members of the overarching category *desserts* 'desserts'; item 15 contains *des personnages* 'DES characters' and *des lieux pour la trame de l'histoire* 'DES places where the story takes place' as members of the category *éléments de l'histoire* 'apects of the story'. (The complete items can be found in Appendix E.) The similarity of the concepts *des Converse* 'DES Converses' and *des Nike* 'DES Nikes' in item 01 strengthens the sense of analogy as compared to these two items. This makes it even more salient

that the addressee in example (13) has also bought DES [a specific brand of shoes]. In other words, the specificity of the category 'shoe brands' in item 01 adds to the contextual salience of the indefinite article *des*. This may be a reason for the higher median rating of item 01 (3.8) compared to item 05 (1.6) and item 15 (1.4).

Second, shoes come in pairs, unlike desserts, aspects of the story and most other categories. The duality of *des Converse* 'DES Converses' and *des Nike* 'DES Nikes' makes the grammatical plural of *des* in *des quoi* 'DES what' contextually salient. This is a second aspect of item 01 that increases the contextual salience of the indefinite article.

In short, the only item in Condition B that received a relatively high rating had properties that made the indefinite article even more salient than in the other items. It is probably hard to make an indefinite article salient enough, i.e. so salient that the question really becomes Maximally Given. This is much easier in an echo question, where the indefinite article is mentioned in the previous utterance.

There may be a second factor that contributed to the low ratings in Condition B (Maximal Givenness). Differently from expectation, an online survey is in some sense less controlled than a discussion face to face. In an online survey, you do not know if a participant is distracted or whether she reads all trials carefully. An indication of the latter can be gained from the time that participants took to complete the survey. Table 4 displays the time it took respondents to rate the 15 items of the rating study, the 15 items of the other study and the 30 fillers, and to complete a list of demographic questions.

Table 4. Time taken to complete the survey

	DURATION
Mean	19 min. 17 sec.
Minimum	7 min. 22 sec.
Maximum	43 min. 5 sec.

It should also be kept in mind that the frequent mention of the indefinite article *des* was a crucial ingredient in making questions in Condition B Maximally Given. If a participant reads these contexts too fast and misses the indefinite article, there is not much difference left between the contexts in Conditions A and B. Some participants who completed the survey very fast may have missed the article.[52] If so, this may somewhat have reduced the average difference, even though the effect is still significant due to the more observant participants. Although the instructions urged participants to pay careful attention to the context, there was no specific task to enforce this.

In sum, *wh*-in-situ questions with *des quoi* 'DES what' are not generally very natural in a context designed to make them Maximally Given. However, they are significantly more natural in such a context than in an out of the blue context. This means that the type of context makes a difference. In addition, there was one item that was rated reasonably high, and this item had some properties that strengthened the contextual salience of the indefinite article.

Under the proposed analysis, the following interpretation would explain these results. Item 01 was probably the only item in which the indefinite article was salient enough for the participants to really make the question Maximally Given, i.e. including the indefinite article. (It would be interesting (but difficult) to do a similar rating study yet with all items modelled on item 01.) Under this interpretation, the results suggest that it is in principle possible to interpret a *wh*-in-situ question with *des quoi* 'DES what' via a choice function, while this is not possible via covert movement.[53] However, a choice function interpretation requires the

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[52] I was not able to show statistically that the difference between Conditions A and B was smaller for participants who completed the survey very fast.

[53] In the examples in Chapter 5, the choice functions selected an individual out of a set of individuals. If a question with *des quoi* 'DES what' is interpreted via a choice function, the choice function selects a set out of a set of sets. This requires a choice function that can take this type of argument (something that is not a set of individuals), like a generalised choice function, cf. Yanovich (2005). This is a choice function that is not just available for *wh*-DPs but also for other types of constituents. See also Section 6 of this chapter, where I suggest that echo questions are also interpreted via a choice function.

indefinite article *des* to be salient enough for the speaker. That is difficult without the indefinite article being present in the previous utterance, which would result in an echo question. In the absence of the right type of context, covert movement is the only option, resulting in an unacceptable sentence.

In conclusion, the interpretation of the data is not clear-cut, but the results can be considered as additional support for the existence of two types of *wh*-in-situ. In addition, the above results clearly show that echo questions are perfectly natural with *des quoi* 'DES what' in French, which has not (as far as I know) been demonstrated before. Finally, it should be kept in mind that the results were obtained in a sample with a restricted age range (age 20-34) and do not necessarily generalise to other population.

3   *Wh*-in-situ out of the blue: a rating study

The previous section compared *wh*-in-situ questions with *des quoi* 'DES what' in contexts that were designed to trigger choice function *wh*-in-situ to (a) covert movement *wh*-in-situ and (b) echo questions with the same form. I now return to the data variation described in Chapter 2. I focus specifically on *wh*-in-situ questions in an out of the blue context, which I suggest are interpreted via covert movement, and investigate several of their properties.

To recapitulate, Chapter 2 laid out the following, mostly controversial, properties of French *wh*-in-situ questions (17).

(17) a. prosodic properties
      b. occurrence of intervention effects
      c. extra-strong presupposition
      d. infelicity as indirect questions
      e. (in)felicity inside a strong island
      f. (in)felicity as long-distance questions

The prosodic properties have been investigated in Chapter 4 and will be discussed again in Section 4.2 below. The occurrence of intervention effects has been examined in Chapter 5 and the extra-strong presupposition will be discussed in Section 4.1 below. In this section, I report on a rating study that investigated the felicity of *wh*-in-situ out of the blue in indirect questions, inside a strong island (specifically an adjunct island) and in long-distance questions ((G1b) in (6) above).

It seems possible that part of the data variation discussed in Chapter 2 is due to differences between age groups. I therefore investigated these issues for one particular age group, namely age 20 to 35.

Regarding indirect questions, I hypothesised that *wh*-in-situ is infelicitous in such questions. The literature discussed in Chapter 2 is fairly consistent on this point (see the references there), but an aim of the rating study is to confirm that this is also true of *wh*-in-situ in an out of the blue context. I also meant to set up a comparison for the other conditions, which are more controversial.

As for strong islands, I specifically targeted one particular type of island, namely the adjunct island. The purpose of the rating study was to investigate several properties of *wh*-in-situ in an out of the blue context, not to focus on its felicity inside different types of islands. I therefore selected one type and the adjunct island seemed the most suitable one. With complex DP islands it can be argued that the whole DP moves; with subject and coordination islands there may be more going on, which might complicate matters (see the literature review in Chapter 2). This is the first experimental study (to my knowledge) that investigates *wh*-in-situ inside a strong island; future research will have to establish whether these other strong islands behave in the same way as the adjunct island. My hypothesis based on informal discussions was that in an out of the blue context, *wh*-in-situ with an argument *wh*-phrase is reasonably acceptable inside an adjunct island.

With respect to long-distance questions, I hypothesised that *wh*-in-situ is acceptable in such questions in an out of the blue context. The literature on *wh*-in-situ in long-distance questions is divided (see Chapter 2), but in the only previous (yet unpublished) rating study to investigate this, participants did not rate long-distance questions with *wh*-in-situ any

lower than with *wh*-fronting (Tual 2017a). In an elicited production experiment that mainly investigated children's utterances, the adult control subjects also produced some long-distance *wh*-in-situ questions, but not many (see Chapter 2 for more details) (Oiry 2011). Chapter 2 also mentioned that several factors have been claimed to influence the acceptability of *wh*-in-situ in long-distance questions. Investigating these was however not the purpose of the rating study. In the current rating study, I included long-distance questions with two purposes. The first was to test the main hypothesis that *wh*-in-situ is acceptable in long-distance questions in French. This concerns the long-distance property of these questions. Secondly, the long-distance *wh*-in-situ questions would be uttered in an out of the blue context. If these questions were acceptable, it would confirm that French *wh*-in-situ is felicitous in such a context.

Consequently, I set up the following three conditions for covert movement *wh*-in-situ (18).

(18) *Conditions*
    A. Indirect question
    B. Adjunct island
    C. Long-distance question

In the next sections, I present the materials (3.1), analysis (3.2), results (3.3) and discussion of the results (3.4) of this rating study. The procedure and participants are the same as in the rating study discussed in Section 2; they are not repeated here.

3.1 Materials

The materials in all three conditions took the form of a description of the conversational setting, followed by the target sentence. An example is presented in (19).

(19) *Description of the conversational setting*

> Tu es membre d'un club de tennis. Tu as joué un bon match et
> maintenant tu bois un verre avec ton partenaire de tennis. Avant de
> reprendre l'entraînement, vous discutez de ce que vous allez faire ce
> soir. Tu dis :
>
> [target sentence]
>
> 'You're a member of a tennis club. You played a good game and now
> you're having a drink with your tennis partner. Before resuming the
> training, you are discussing your plans for tonight. You say:'
>
> [target sentence]

The conversational setting described whom the speaker of the sentence
was talking to and in what context. It always ended with an equivalent of
'you say (to him/her)' or 'you ask (him/her)' (followed by a ':'). The
contexts were constructed to be natural and to indicate that the register
was informal. They were written and checked by at least three native
speakers of French.[54]

As the rating study was meant to investigate properties of *wh*-in-situ
in an out of the blue context, which I suggested is interpreted via covert
movement, it was important to exclude the possibility of employing a
contextually licensed choice function. Several measures were taken to this
end. First, the context did not mention any aspect of the content of the
target question. Second, the questions were preceded by a topic change
marker (Fraser 1999) like *tiens d'ailleurs* 'hey by the way', to signal a
change in discourse topic. Third, I used a diagnostic for Maximal
Givenness that I will lay out in more detail in Section 4.1: if the question is
Maximally Given, a negative reply (e.g. *rien* 'nothing') is odd. Several
native speakers of French confirmed that a negative reply to the items was
natural.

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[54] See Section 2.1 for acknowledgements.

I now describe the properties of the items in each condition. In Condition A (indirect question), I took care to avoid a reading as a direct question. A diagnostic to differentiate between direct and indirect speech is 'concordance of person' (Speas 2000). Speas gives the following example of this for English (20).

(20) a. Indirect speech: concordance of person
          She_i says that *she_i* will win.

       b. Direct speech: person switch
          She_i says "*I_i* will win".

                                                                      [Speas 2000: 4, ex. 5]

In both (20a) and (20b), the pronominal subject of the embedded clause refers back to a DP in the matrix clause (*she*). In indirect speech (20a), the pronominal subject of the embedded clause agrees in person with its antecedent (*she*), but in direct speech (20b) it does not (*I*). This works the same way in French. Hence, to avoid a reading as direct speech, I used sentences in which the pronominal subject of the embedded clause referred back to a DP in the matrix clause, with which it agreed in person. I used the first person for this, as in (21), which followed the context in (19) (there was no underlining in the actual study).

(21) *Indirect question* (*Condition A*)

      Tiens d'ailleurs,   ta   copine   m'   a   demandé
      hey   by the way   your   girlfriend me   has   asked

      j' ai   préparé   quoi   pour   le   pique-nique.
      I   have prepared what   for   the   picnic

      Intended: 'Hey by the way, your girlfriend asked me
      what I prepared for the picnic.'

      Not: 'Hey by the way, your girlfriend asked me
      "what did I prepare for the picnic?"'

In addition to the first person pronoun *m(e)* 'me', the items in Condition A all contained a third person subject and the predicate *demander* 'ask' in the matrix clause. Besides the subject *j(e)* 'I', the embedded clause was always composed of a verb in the passé composé (past tense), the *wh*-phrase *quoi* 'what', which was the direct object of the embedded clause, and a PP.

Example (22) displays an item used in Condition B (adjunct island).

(22) *Adjunct island* (*Condition B*)

Tu es en train de prendre ton petit-déjeuner avec ton père. Comme tous les matins, il lit le journal. Tu bois ton café et tout d'un coup, tu lui demandes :

'You're having breakfast with your dad. Like every morning, he's reading the newspaper. You're drinking your coffee. Suddenly you ask him:'

Tiens je voulais te   demander,
hey I   wanted you ask
'Hey I wanted to ask you,

il y   a   eu   un scandale parce que Trump a   dit quoi ?
it there has been a scandal   because   Trump has said what
for what x has there been a scandal because Trump said x?'

All items in this condition contained an adjunct island beginning with *parce que* 'because', which takes indicative mood in the embedded clause. The embedded clause always contained a passé composé. The *wh*-phrase *quoi* 'what' was the direct object of the embedded clause. I used non-D-linked *quoi* 'what', because if this could stay inside an island, it would not be due to D-linking.

An example of an item in Condition C (long-distance question) is displayed in (23).

(23) *Long-distance question* (*Condition C*)

Tu es assis dans le bus qui va jusqu'à l'université. Tu parles avec un ami qui suit les mêmes cours que toi. Il te parle de ses projets pour l'été. Soudain, tu lui dis :

'You're sitting on the bus to the university. You're talking to a friend, who is in the same program as you. He tells you about his plans for the summer. Suddenly you say:'

Sinon,   je pense à   ça,
by the way   I   think   of that
'By the way, I'm just wondering,

tu   crois   que le prof   a   prévu   quoi pour l'   examen ?
you believe that the teacher has planned what for   the exam
what do you think the teacher planned for the exam?'

In this condition, the subject of the matrix clause was always *tu* 'you' and the matrix verb was either *penser* 'think' or *croire* 'believe'. The subject of the embedded clause was a full DP, followed by a verb in the passé composé, the *wh*-phrase *quoi* 'what' and a PP. The *wh*-phrase was the direct object of the embedded clause. All items had the indicative mood and finite tense, because it has been suggested that long-distance *wh*-in-situ questions are only felicitous if they have the subjunctive mood (Mathieu 1999; 2002) or non-finite tense (Bošković 1998; Mathieu 1999).

There were fifteen items in each condition, yielding 45 items in total. These were intermingled with 75 fillers. 45 were the items of the rating study I reported in Section 2. As I mentioned there, the items of the two studies acted as fillers to each other. The other thirty fillers were declaratives. Half of these were declaratives that ought to be felicitous; the other half were comprehensible but infelicitous. Details about the declarative fillers are reported in Section 2.1. The items were presented in a Latin square design with three groups, as described in Section 2.2. The materials of the study can be found in Appendix F.

3.2 Analysis

I first ran a null model with the question's rating on the continuous 50-point scale (from 1.0 to 5.0) as the dependent variable and intercepts of items and participants as random factors. Adding condition as a fixed factor significantly improved the model's fit ($p < 0.001$). Adding other fixed factors, like age, experimental group, time taken to complete the survey or sex did not improve the model. A model that also contained the slopes of either items or participants as random factors did not converge. The best model was therefore a linear mixed-effects model with the question's rating as the dependent variable, condition as a fixed factor and intercepts of items and participants as random factors. I ran this model using the *lmer* function of the *lme4* package (Bates et al. 2015) in R (R Core Team 2019). P-values were obtained using the package *lmerTest* (Kuznetsova et al. 2017). As inspection of the model showed that it suffered from outliers, I removed all outliers with a standard residual of more than 2.5 standard deviations from zero, which was 0.6% of the data (6 outliers). The analysis was run for each reference category (Indirect question, Adjunct island, Long-distance question) to obtain all relevant comparisons.

3.3 Results

The results showed that there were clear differences between each of the three conditions. All differences were highly significant, as is shown in Table 5.

Table 5. Results of a linear mixed-effects model for the rating of *wh*-in-situ questions in an out of the blue context

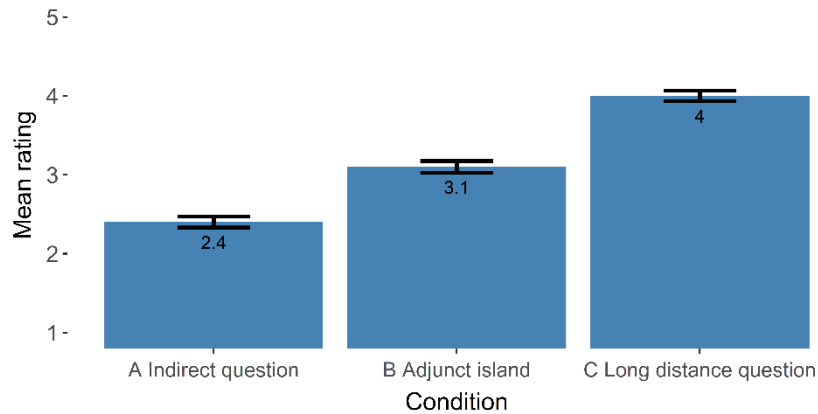| COMPARISON	β	SE	P
Condition B – Condition A	0.73	0.13	< 0.001
Condition C – Condition B	0.92	0.13	< 0.001
Condition C – Condition A	1.66	0.13	< 0.001

Figure 5 displays the mean ratings.

Figure 5. Mean rating of out of the blue *wh*-in-situ questions in the three conditions

The indirect questions were judged not to be very natural and clearly less natural than the questions in the other two conditions. However, a mean rating of 2.4 is not as low as might be expected based on the literature discussed in Chapter 2. Out of the blue *wh*-in-situ questions with an argument *wh*-phrase inside an adjunct island received intermediate judgments: a mean of 3.1 on a scale from 1.0 to 5.0. They were judged to be more natural than indirect questions, but less natural than long distance questions. With a mean rating of 4.0, the questions in Condition C were judged to be quite natural. Given that these items involved French *wh*-in-situ questions that were both long-distance questions and were uttered in an out of the blue context, this shows two things. First, *wh*-in-situ was found to be natural in long-distance questions with indicative mood and finite tense and second, French *wh*-in-situ questions were found to be natural in out of the blue contexts.

Table 6 displays the number of times that participants selected the ends of the scale in each condition, i.e. the ratings '1' and '5'. These numbers present the same pattern.[55]

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[55] This table is meant to illustrate the broad pattern regarding the number of times that participants selected the ends of the scale. Exceptions to the overall pattern, such as the

Table 6. The number of times that questions received
the ratings '1' and '5' in each condition[56]

CONDITION	N	N RATING '1'	N RATING '5'
Condition A Indirect question	320	73	13
Condition B Adjunct island	320	31	39
Condition C Long-distance question	320	7	118

The ratings displayed much variability in all three conditions. This is illustrated by the violin plots in Figure 6. The red area of the violin plots represents the distributional pattern of the ratings and the boxplot shows the median and interquartile range. (Recall that one rating does not correspond to one participant: a cluster of ratings may represent ratings by one or more participants.)
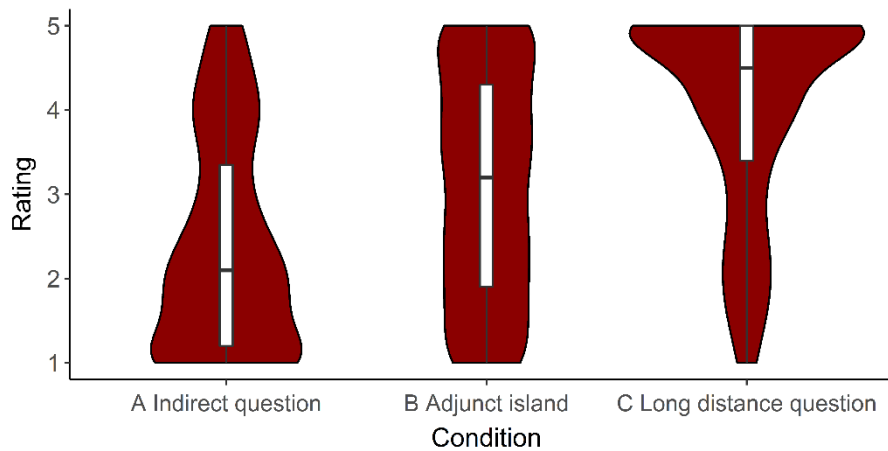
Figure 6. Violin plots of out of the blue *wh*-in-situ questions in the three conditions. The red area, as well as the boxplot in it, displays the distribution of the ratings.

even ratings of '1' for long-distance questions are not very meaningful, as these may also represent ratings during moments when a participant was less attentive.

[56] The number of targets in this table differs from the number in Table 3 in Section 2.5 (N=320 vs. N=315) because I had to exclude one participant in the rating study reported in Section 2, but not in this study.

This variability did not show any clear patterns. For instance, it was not the case that one group of participants accepted *wh*-in-situ questions with an argument *wh*-phrase inside an adjunct island, while another group did not. Rather, the judgments '1' and '5' shown in Table 6 for this condition were sometimes provided by the same participant. An analysis of the ratings of the different items did not provide any further insight either.[57] The overall picture is therefore one in which there are clear and significant differences between the conditions, with a great deal of variation in judgments.

3.4   Discussion of the results

I discuss the results elicited in each of the three conditions in turn.

Regarding Condition A, the literature review in Chapter 2 showed that *wh*-in-situ in indirect questions is generally regarded as infelicitous in French. For instance, in a study by Tual (2017a), such questions received a median rating of '-2' on a 7-point scale ranging from '-3' to '+3' (see Chapter 2). The mean rating of 2.4 in the current study was therefore higher than expected. What could be the cause of that?

One might think that participants did not use the entire rating scale. That is however not the case, as evidenced by the declarative fillers. Recall that the rating study contained thirty declarative fillers, half of them felicitous and the other half infelicitous (see Section 2.1 for details). Their ratings are shown in Table 7.

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[57] My impression is that the variability is mostly due to noise: participants filled in the questionnaire very fast (see Section 3.4), read the sentences quickly and were not always consistent. Nevertheless, the overall pattern in the data is clear.

Table 7. Ratings of the declarative fillers

DECLARATIVE FILLERS	N	MEAN	N RATING '1'	N RATING '5'
Felicitous fillers	960	4.7	1	671
Infelicitous fillers	960	1.2	805	20

They show that the respondents made use of the entire scale.

A more likely cause for the mean rating of 2.4 is the fact that it was crucial to read the items carefully, with attention for detail. That was the case for this condition in particular. As explained above, a reading as an indirect question was enforced by concordance of person between the pronominal subject of the embedded clause and a DP in the matrix clause ((25) above). If a participant read the items in Condition A too fast and did not register the pronominal subject of the embedded clause, the target sentences could have been interpreted as direct speech. As I also discussed in Section 2, the mean duration of the survey shows that some participants read the items very fast. The average time it took to rate the 15 items of the rating study, the 15 items of the other study and the 30 fillers, and to complete a list of demographic questions was 19 minutes and 17 seconds. The mean rating of indirect questions might therefore have been boosted by participants who misread the items as direct questions. As not all of the 64 participants would have been sloppy in their reading, this resulted in the mean rating of 2.4. In the future, the study (and also the one in Section 2) might be repeated in a setting face to face with the researcher, who can then encourage careful reading.[58]

I now turn to the judgments regarding Condition B (adjunct island). These sentences received intermediate ratings (with much variability); how should this be interpreted? Recall that participants were asked to judge how 'natural' they found the target sentence, not how 'acceptable'. This is not quite the same. An informant told me that while she found the

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[58] I don't have enough information about Tual's (2017a) items, nor about the time taken by participants to complete that study to make a comparison with my own experimental set-up.

target sentences with *parce que* 'because' acceptable, she would prefer to have two simpler sentences, like *Pourquoi il y a eu un scandale ?* 'Why has there been a scandal?' and *Trump a dit quoi ?* 'What did Trump say?'. According to her, the target sentences were perfectly grammatical, but there were easier ways to express the same meaning, which she would prefer. The intermediate ratings might be a reflection of this. If so, the results in Condition B may suggest that the target sentences were to some extent felicitous, but not maximally natural, because there are other ways to express the same meaning which might be preferable.

Long-distance questions (Condition C) were judged to be quite natural in this rating task. This is in line with many previous studies (e.g. Obenauer 1994; Shlonsky 2012; Tual 2017a) and at the same time contradicts many other studies (e.g. Bošković 1998; 2000; Mathieu 1999; 2002). It is unclear to me why different studies have reached different conclusions in this respect. There may be an effect of age, since both this study and Tual (2017a) (who found similar results) targeted younger speakers. This could be indicative of a change in the language (see also Section 7), however, some older studies also report that *wh*-in-situ in long-distance questions is acceptable; see Chapter 2 for more discussion.

The results regarding long-distance questions (Condition C) contradict several specific claims in the literature. First, 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). This was not confirmed by the current study, in which the questions contained finite tense and received high ratings. Second, Mathieu (1999; 2002) has claimed that long-distance *wh*-in-situ must have subjunctive mood to be felicitous. The results obtained here contradict this for the population of the current study as well. The same is true of Baunaz's (2005) assertion that long-distance *wh*-in-situ needs a 'specific' interpretation to be felicitous, which would not be compatible with an out of the blue context (see Chapter 5 for information about Baunaz's specificity).

In conclusion, I interpret the results regarding *wh*-in-situ in an out of the blue context, in a population of age 20-35, as follows. First, indirect questions were not found to be very natural, although the ratings were

higher than expected based on the literature. Second, questions in which an argument *wh*-phrase was situated inside an adjunct island received intermediate ratings. They were not judged to be maximally natural but were not totally unnatural either. Third, long-distance questions with indicative mood and finite tense were judged to be quite natural, which allows for three conclusions regarding long-distance *wh*-in-situ. That is, I observed no restrictions on long-distance *wh*-in-situ in terms of a) indicative mood, b) finite tense and c) contextual restrictions. Finally, since the study showed that long-distance *wh*-in-situ was judged to be natural out of the blue, it also allows for the conclusion that French *wh*-in-situ is acceptable out of the blue. This latter result confirms that at least for a population of this age range, not all French *wh*-in-situ questions require Maximal Givenness.

4   Explaining data variation

Section 2 investigated *wh*-in-situ questions containing *des quoi* 'DES what'. One of the findings was that such questions were rated differently in a context that was designed to make them Maximally Given from questions in an out of the blue context. The rating study presented in Section 3 confirmed that at least some speakers of French allow for *wh*-in-situ in an out of the blue context. With this as background, I return to some of the data variation described in Chapter 2. In that chapter, I noted a recurring pattern in the data, according to which some authors observed a particular property of French *wh*-in-situ questions, other authors contradicted this and yet other authors observed the property in a subset of the data. These properties were the presence of an extra-strong presupposition, the presence of a large sentence-final rise and the occurrence of intervention effects.

   In this section, I set out to explain this data variation, suggesting that two factors are involved. First, I hypothesise that the two mechanisms to interpret *wh*-in-situ are not both available to all speakers. In particular, I suggest that the grammar of certain speakers contains a contextually

licensed choice function, but not covert movement to interpret *wh*-in-situ.[59] I will call a speaker who only has choice function *wh*-in-situ in her grammar a Type A speaker and a speaker who has both mechanisms to interpret *wh*-in-situ a Type B speaker. Second, as the use of a choice function is licensed by Maximal Givenness, a speaker must be able to construe the necessary context to employ a choice function. This can in particular be difficult for a sentence that contains an intervener. In turn, I discuss how the combination of these two factors accounts for the variation regarding the extra-strong presupposition (Section 4.1), the sentence-final rise (Section 4.2) and intervention effects (Section 4.3) ((G1c) in (6) above).

4.1   Extra-strong presupposition

Recall from Chapter 2 that according to many authors, French *wh*-in-situ questions involve what is described as an 'extra-strong existential presupposition' (e.g. Chang 1997; Cheng & Rooryck 2000; Coveney 1989). For example, the *wh*-in-situ question in (24) is felicitous because speaker B already assumes that speaker A will be buying Pierre something.

(24) 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, note 3]

It is 'strongly presupposed' that there exists a value to fill the *wh*-phrase, because the speaker merely requests more detail about the present that speaker A will buy. This extra-strong presupposition may partly be based

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[59] It cannot be ruled out that there are also speakers who have covert movement *wh*-in-situ and no choice function *wh*-in-situ, i.e. a third type of grammar, yet the data provide no clear indication that this is the case.

on world knowledge, such as the knowledge that one usually buys a present when someone has their birthday. I pointed out in Chapter 2 that it was not clear what the conceptual status was of the extra strong presupposition or where it might come from.

However, in light of the proposal that Maximal Givenness licenses the use of a choice function, I suggest that the questions that were claimed to exhibit an extra-strong-presupposition involve choice function *wh*-in-situ and are Maximally Given. In (24), the context (in combination with world knowledge) can make salient for speaker B that speaker A is going to buy Pierre a present.[60] Speaker B asks for further specification of this present. The question can therefore be paraphrased using a definite description, as in (25).

(25) The present that you are going to buy for Pierre – what is it?

Consequently, the question in (24) can be interpreted as Maximally Given. I suggest that this is what gives the impression of an 'extra strong existential presupposition'.

According to the advocates of the extra-strong-presupposition, a negative reply to a *wh*-in-situ question is odd (26), contrasting with a *wh*-fronted question (27).

(26) Question: Marie a   acheté quoi ?   Answer: [??]Rien.
            Marie has bought what   nothing
            'What is it that Marie bought?'   'Nothing.'

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

                      [Chang 1997: 42, exs. 37 and 40]

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[60] I would say that the relevant CSM is 'semi-salient' in this example, i.e. also allows for an alternative interpretation (see Chapter 5).

This makes sense if (26) is Maximally Given. If it is salient for you that Marie bought something and you merely ask what it is, the reply that Marie bought nothing feels like an unexpected and not completely congruent answer. The fact that a negative reply is perceived as odd can therefore be used as a further diagnostic for Maximal Givenness.

As I mentioned above, while some authors observe an extra strong existential presupposition, other authors state that French *wh*-in-situ questions may be used out of the blue (e.g. Adli 2006; Hamlaoui 2011) and yet others suggest that only part of the French *wh*-in-situ questions exhibits an extra-strong presupposition (e.g. Baunaz 2011; Starke 2001). If certain speakers (Type A speakers) only have choice function *wh*-in-situ, while other speakers (Type B speakers) also have the covert movement option, these data can be accounted for. That is, a Type A speaker would observe that French *wh*-in-situ questions are always Maximally Given, giving the impression of an extra-strong presupposition (e.g. Chang 1997; Cheng & Rooryck 2000). Yet a Type B speaker would note that French *wh*-in-situ questions can be used out of the blue (e.g. Adli 2006; Hamlaoui 2011) or that only a subset of these questions impose a strong restriction on the context (e.g. Baunaz 2011; Starke 2001).[61,62]

Consequently, the existence of two different mechanisms to interpret *wh*-in-situ, in combination with the hypothesis that certain speakers only have of one of these (namely choice function *wh*-in-situ), explains the seemingly contradictory data regarding the extra-strong presupposition.

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[61] There is one author, Mathieu (2004), who states that French *wh*-in-situ questions are *not* felicitous when a context (i.e. "a situation and its participants" p. 57) has already been established. I have no explanation for this. I would not want to conclude from this that Mathieu is a third type of speaker who has covert movement *wh*-in-situ but no choice function *wh*-in-situ, cf. footnote 59, as the description of *wh*-in-situ in Mathieu (2002) sounds rather like Maximal Givenness.

[62] There is no reason why a *wh*-fronted question cannot be Maximally Given and hence give the impression of an extra-strong presupposition. Yet crucially, such a question does not have to be Maximally Given. For a Type B speaker, the same is true of French *wh*-in-situ questions, which are therefore (for these speakers) not presuppositionally different from a *wh*-fronted question.

The proposal also explains what causes the appearance of such a presupposition, which was not clear before.

4.2 Sentence-final rise

The proposal also sheds light on the disagreement regarding the sentence-final rise. As was discussed in Chapters 2 and 4, some authors claim that French *wh*-in-situ questions standardly exhibit a large sentence-final rise (e.g. Cheng & Rooryck 2000; Déprez et al. 2013). This has been opposed by other authors, who maintain that French *wh*-in-situ questions do not display such a rise (e.g. Mathieu 2002). Yet other authors suggests that a final rise is present in part of the cases (e.g. Adli 2004; 2006).

In the prosody experiment reported in Chapter 4, French *wh*-in-situ questions with a narrow focus on the *wh*-word were marked by a large sentence-final rise, while *wh*-in-situ questions with broad focus were not. Based on known correlates of focus marking in French, I analysed the large sentence-final rise as a correlate of narrow focus marking.[63] Now crucially, choice function *wh*-in-situ questions always have a narrow focus on the *wh*-word. This is a consequence of Maximal Givenness. For instance, in (24) above, speaker B's utterance has a narrow focus on *quoi* 'what', as *tu vas lui acheter* 'you will buy him' is contextually salient for the speaker (see Chapter 3 for more explanation about focus). Since choice function *wh*-in-situ questions always have a narrow focus on the *wh*-word, they are standardly marked by a large sentence-final rise.[64] Consequently,

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[63] The sentence-final rise of the narrow focus questions was a result of 'tone copying', the copying of the F0 maximum (highest pitch) on the final syllable of the *wh*-phrase to the final syllable of the utterance. In other words, tone copying (in interrogatives) involves a high tone being copied to the end of the utterance. This phenomenon is a correlate of focus marking in French, also in declaratives and yes/no questions (see Chapter 4 for references).

[64] In fact, the narrow focus questions in the prosody experiment can be interpreted as Maximally Given. The contexts that were used to elicit these questions were modelled on an example by Engdahl (2006: 100, ex. 23), which is example (12) in Chapter 5. According to Engdahl, intervention effects are absent in such a context. To be precise, I described the CSM that would make Engdahl's question Maximally Given as 'semi-salient'

Type A speakers, who only have the choice function option, would observe that French *wh*-in-situ questions standardly display a large sentence-final rise.

In contrast, covert movement *wh*-in-situ questions may display different focus structures, depending on the context in which they occur. If they have a narrow focus on the *wh*-word, they are expected to display a large sentence-final rise. Yet, if they have broad focus, they are marked by a mostly falling contour. As I mentioned in Chapter 4, the sentence-final rise in such questions may be extremely small. Speakers with covert movement as well as choice function *wh*-in-situ (i.e. Type B speakers) would therefore not observe that all French *wh*-in-situ questions display a large sentence-final rise. Rather, they may note that a large sentence-final rise is optional (Adli 2004; 2006). They may even maintain that French *wh*-in-situ questions display a mostly falling contour (e.g. Mathieu 2002). Under the current analysis, this would suggest that they only investigated questions with broad focus.

In short, I suggest that the sentence-final rise is a correlate of narrow focus marking and choice function *wh*-in-situ questions always have a narrow focus on the *wh*-word, which is therefore marked by a large sentence-final rise. Yet covert movement *wh*-in-situ questions may display different focus structures, in which a large sentence-final rise may be absent. The data variation regarding the final rise is therefore explained by the presence of two different mechanisms to interpret *wh*-in-situ, in combination with the hypothesis that certain speakers (Type A speakers) only have the choice function option.

4.3   Back to intervention effects

In Chapter 5, I proposed that intervention effects arise when an intervener blocks covert movement. A context that licenses the use of a choice function can therefore void intervention effects. What does this predict with respect to the judgments of Type A and Type B speakers?

(example (43) in Chapter 5), meaning that the question may be interpreted as Maximally Given but also leaves room for another interpretation.

Both Type A and Type B speakers can use a contextually licensed choice function to interpret *wh*-in-situ. This predicts that all speakers should be able to accept a French *wh*-in-situ question with an intervener, if the context makes the question Maximally Given. However, crucially, the speaker must be able to construe such a context.

I discussed in Chapter 5 that it is easier for some questions to construe a context that makes them Maximally Given than for others. Different aspects of the content of the sentence have an influence on how easy or difficult this is. For instance, I explained that in a sentence with an intervener, an intervener that imposes a very specific restriction on the context like *plus de cinq N* 'more than five N' makes it harder to envisage the necessary context than an intervener with a very general meaning like *plusieurs N* 'several N'. I suggest that likewise, a context that makes the question Maximally Given is often less easily available for a sentence with an intervener (28a) than for one without an intervener (28b).

(28) a. *Plus de cinq étudiants* se sont inscrits à quel cours ?
       'For which course did more than five students register?'

    b. <u>Sylvie</u> s'est inscrit à quel cours ?
       'For which course did Sylvie register?'

It is therefore possible that a Type A speaker accepts a particular *wh*-in-situ question without an intervener, but fails to accept it when an intervener is added, because she can no longer envisage the necessary context. A Type B speaker also has to use a choice function to interpret a sentence with an intervener, as covert movement results in intervention effects. Consequently, the prediction for speakers with both types of grammar is that they can accept a *wh*-in-situ question with an intervener, but only if the speaker is able to envisage the necessary context. A second prediction is that judgments of *wh*-in-situ questions with an intervener involve much variation. In addition to the variation already discussed in Chapter 5, variation among speakers is predicted, as some speakers will be better at construing the necessary context than others. This holds for speakers of both Type A and Type B.

As a summary of Section 4, Table 8 lists the predictions of the proposal regarding the properties of French *wh*-in-situ questions for Type A and Type B speakers.

Table 8. Predictions of the proposal regarding the properties of French *wh*-in-situ questions for Type A and Type B speakers

	TYPE A SPEAKER [ONLY CHOICE FUNCTION]	TYPE B SPEAKER [CHOICE FUNCTION + COVERT MOVEMENT]
Contextual restriction	Appearance of an extra-strong presupposition (Maximal Givenness)	a) Observes that *wh*-in-situ questions may occur out of the blue **or** b) Observes an extra-strong presupposition in a subset of the data
Large sentence-final rise	Standardly present (due to narrow focus)	Depends on the focus structure; present in a subset of the data. (Observes no large rise when examining only broad focus questions.)
Acceptable with intervener	If the speaker can construe a context that makes the question Maximally Given	If the speaker can construe a context that makes the question Maximally Given

This concludes the part of the chapter that focuses exclusively on French. Based on the intervention effects data, Chapter 5 put forth the proposal that French has two mechanisms to interpret *wh*-in-situ questions. The current chapter extends this proposal in two ways. The preceding sections described several of the properties of questions interpreted via these mechanisms and suggested that some speakers (Type A speakers) only have choice function *wh*-in-situ. In the next two sections, I take a cross-linguistic perspective. I aim to show that the choice

function account is also a promising direction of research for contextually restricted *wh*-in-situ in *wh*-fronting languages like English and German ((G3) in (6) above). In the next section, I explore to what extent the properties of *wh*-in-situ in English and German resemble those of French choice function *wh*-in-situ (G3a). Section 6 compares the properties *wh*-in-situ in English and German to those of echo questions (G3b).

5 *Wh*-in-situ in English and German

Certain *wh*-fronting languages, like English and German, also allow a restricted use of *wh*-in-situ (i.e. other than in echo questions). This *wh*-in-situ is only acceptable in a specific set of contexts, i.e., it is contextually restricted. In what follows, I explore to what extent this *wh*-in-situ can also be explained by the choice function account proposed for French, which would derive the contextual restriction from a contextually supplied choice function. I limit the discussion to English and German, which according to Poschmann (2015) have very similar properties in this respect, but there are data that at first sight appear similar in Spanish (Biezma 2018; Jiménez 1997), (Brazilian) Portuguese (Pires & Taylor 2009) and Modern Greek (Roussou et al. 2014). I first investigate to what extent the contextual restriction of *wh*-in-situ in English and German can be analysed as Maximal Givenness (Section 5.1). Then I show that this *wh*-in-situ shares certain other (related) properties with choice function *wh*-in-situ in French (Section 5.2).

5.1 Maximal Givenness

It has long been known that *wh*-in-situ questions also occur in *wh*-fronting languages like English (Bolinger 1978; Kuno & Robinson 1972; Postal 1972). The most well-known types of examples are quiz questions as in (29) and courtroom interrogations as in (30).

(29) And now for $5,000, London is the capital of WHICH country?

[Cooper 1983: 148, ex. ii]

(30) You were informed of the fact on WHAT day?

<div align="right">[Bartels 1997: 310, ex. 25, who cites Carlson 1975]</div>

Other 'categories' of contexts for *wh*-in-situ that are mentioned in the literature are classroom contexts (31) and contexts in which one asks to be reminded of something ('reminder questions') (32) (Poschmann 2015; Reis 1992; 2012).

(31) Und wenn ihr unsicher seid, dann lest ihr WO nach, Kinder?
    'And if you are not sure, then you look it up WHERE, kids?'

<div align="right">[Reis 2012: 8, ex. 16b]</div>

(32) Elena zu Annika: Ich muss morgen um 15.30 gehen.
    Annika: Gut, dann versuchen wir uns vorher zu treffen.
    Am nächsten Tag kommt Annika ins Büro und fragt:

    (Entschuldige,) Du gehst WANN (nochmal)?

    'Elena to Annika: I need to leave at 3:30 pm tomorrow.
    Annika: All right, then we'll try to meet each other beforehand.
    The next day, Annika comes into the office and asks:

    (Sorry,) you're leaving WHEN (again)?'

<div align="right">[Poschmann 2015: 226, ex. 28]</div>

However, *wh*-in-situ questions in English and German are used much more widely than this (Bobaljik & Wurmbrand 2015; Bolinger 1978; Ginzburg & Sag 2000; Pires & Taylor 2009; Poschmann 2015). They can be used to ask for further detail about an event (33), to follow up on a kind of enumeration (34) and in the absence of any linguistic context (35), (36). They may also have "a sarcastic or disdainful edge to them" (Bobaljik & Wurmbrand 2015: 16), as in (37).

(33) A: Well, anyway, I'm leaving.
     B: OK, so you'll be leaving WHEN exactly?

[Ginzburg & Sag 2000: 280, ex. 63a]

(34) A: I'm going to send the sourdough bread to the Southern Bakery,
        and the croissants to Barringers.
     B: I see, and the bagels you're going to send WHERE?

[Ginzburg & Sag 2000: 280, ex. 65]

(35) Major, you want this stuff WHERE?

[Bobaljik & Wurmbrand 2015: 14, ex. 2b]

(36) B sees his friend reading something.
     B: You're reading WHAT?

[Pires & Taylor 2007: 4, ex. 9ab]

(37) A: They're planning to buy a new house.
     B: And they're going to pay for it with WHAT, love and hope?

[Bolinger 1978: 131, ex. 260]

There have been some attempts to characterize the contexts that license *wh*-in-situ questions in English and German. I summarise the four proposals known to me, which are similar in the intuition behind them (see also Biezma (2018), who discusses Spanish).

First, Reis suggests that for *wh*-in-situ in English and German to be felicitous, either the speaker or the interlocutor is obliged (or under a strong expectation) to know the answer to the question (Beck & Reis 2018; Reis 1992; 2012). The answer to certain types of examples is known to the speaker, as in quiz questions (29) and questions in a classroom context (31). The answer to other types of examples is known to the interlocutor, as in reminder questions (32) and questions asking for further detail about an event (33). This does seem to describe the data, but it treats the examples as belonging to more than one category, i.e., it is not a generic description of the data.

Second, Pires and Taylor propose that when *wh*-in-situ questions in English and (Brazilian) Portuguese are felicitous, "the set of possible answers to them is part of the Common Ground" (Pires & Taylor 2009: 5). Common Ground involves the presumed background information and beliefs that are taken for granted and shared by the interlocutors (Stalnaker 1978). This Common Ground requirement seems too weak, because shared beliefs can be unrelated to the discourse context (see Section 1.4.1 of Chapter 3 for discussion). If I have a conversation with a friend who likes to read, it can be a shared background belief that she is reading something, whatever the (non-linguistic) utterance context. Yet in (36), the context makes *salient* for speaker B that his friend is reading something, because he sees his friend doing it. Similarly, one does not ask *you're going to send the bagels WHERE?* (cf. (34)) if the interlocutors know that the addressee will send the bagels somewhere but this fact is not salient in the (non-linguistic) utterance context. In (34), this is made salient by the enumeration involving the other types of bread that get sent to a particular place.

Third, Ginzburg and Sag (2000: 281) remark that the factor that licenses *wh*-in-situ in English "is more closely related to the salience of the question at hand, i.e. the fact that this question has already been introduced or at least accommodated into the context". For instance, in (37), speaker A's utterance establishes the buying of a house as a fact of the discourse context. It can easily be accommodated that the house must be paid for with something. Ginzburg and Sag suggest that the fact that this is salient in the discourse is what licenses the *wh*-in-situ question. Ginzburg and Sag do not work out the contextual licensing condition in much detail, but these comments go in the same direction as my proposal regarding Maximal Givenness of choice function *wh*-in-situ in French.

The fourth account, that of Poschmann (2015: 131), comes even closer to Maximal Givenness. She suggests that *wh*-in-situ questions in English and German are licensed if they are entirely GIVEN in the context in the sense of Schwarzschild (1999). Recall that when a question is Maximally Given, it is entirely given in the sense of Büring (2016). Schwarzschild's (1999) GIVENness and Büring's givenness are however not the same.

Schwarzschild's (1999) GIVENness takes into account what is focused. A constituent is GIVEN if, abstracting away from the focus, the meaning of the constituent is entailed by a salient antecedent. In (32), here repeated as (38), the focus is the *wh*-phrase *wann* 'when'.

(38) Elena zu Annika: Ich muss morgen um 15.30 gehen.
      Annika: Gut, dann versuchen wir uns vorher zu treffen.
      Am nächsten Tag kommt Annika ins Büro und fragt:

      (Entschuldige,) Du gehst WANN (nochmal)?

      'Elena to Annika: I need to leave at 3:30 pm tomorrow.
      Annika: All right, then we'll try to meet each other beforehand.
      The next day, Annika comes into the office and asks:

      (Sorry,) you're leaving WHEN (again)?'

                                              [Poschmann 2015: 226, ex. 28]

Replacement of the focus by a variable (*Du gehst x* 'you're leaving x'), followed by binding by an existential operator, yields (39).

(39) ∃x. [Du gehst x]
      '∃x. [you're leaving x]'

The question in (38) counts as GIVEN according to Schwarzschild (1999) if there is a salient antecedent that entails (39). In (38), this must be something like (40).

(40) Salient antecedent: 'You are leaving at a specific time.'

According to Poschmann (2015), (38) is licensed if a contextually salient antecedent such as (40) entails (39), which is the case.

The problem with Poschmann's account is that 'entirely GIVEN in the sense of Schwarzschild (1999)' cannot be distinguished from narrow focus, because GIVENness takes into account what is focused. However, a

narrow focus on the *wh*-phrase is not enough to license *wh*-in-situ. Native speakers I consulted report that while (41a) is acceptable, (41b) is not.

(41) A: I bought my tickets for the festival yesterday.

    B: a.   Oh, that's nice! [WHEN]$_F$ did you buy them? When I tried, they were sold out.

        b. #Oh, that's nice! You bought them [WHEN]$_F$? When I tried, they were sold out.

However, Poschmann's account predicts (41b) to be acceptable, since there is a salient antecedent that entails (42).

(42) ∃x. [you bought them (at) x]

This shows that Poschmann's generalisation is too weak.

    I will now investigate to what extent Maximal Givenness, the contextual licensing condition for French choice function *wh*-in-situ, can account for the contextual restriction as manifested in the English and German examples above.

    In (38), the question can indeed be interpreted as Maximally Given. Elena told Annika the previous day what time she would be leaving, but Annika forgot. It is therefore salient for Annika that there is a specific referent for the *wh*-phrase, i.e. a time at which Elena is leaving; Annika would just like to be reminded of what this time is. Hence, the question in (38) can be paraphrased using a definite description corresponding to the contextually given referent, as in (43). This shows that the question in (38) is Maximally Given.

(43) The time at which you are leaving – what is it (again)?

    I now turn to (41), in which *wh*-in-situ is infelicitous. For the question in (41) to be Maximally Given, the context must makes salient the existence of a specific time at which the addressee bought the tickets for the festival yesterday. This would make (44) a paraphrase of the question.

(44) The time at which you bought your tickets for the festival –
     what is it?

However, while the context in (41) mentions that the addressee bought
the tickets for the festival yesterday, it does not make salient a specific
time at which this happened. (44) is therefore not a paraphrase of the
question in (41). This shows that the *wh*-in-situ question in (41) is not
Maximally Given, which, in contrast to Poschmann's account, correctly
predicts its unacceptability.

    The reason why Maximal Givenness and Poschmann's account yield
different results here is that Poschmann's 'entirely GIVEN in the sense of
Schwarzschild (1999)' cannot be distinguished from narrow focus on the
wh-phrase, while Maximal Givenness is more specific than that. For a
question to be Maximally Given, it must be contextually salient for the
speaker that there is a specific referent for the *wh*-phrase. The *wh*-in-situ
question merely requests further information about this known referent.
This explains why in contexts without such a known referent like (41), *wh*-
in-situ is not licensed.

    Moving on to the question in (34), this question is apparently licensed
by the preceding enumeration. When speaker B hears about two types of
bread that get sent to two different places, this can make salient for him
that for the third type of bread, there is also a specific place to which it
will be sent. This place is the referent for the *wh*-phrase; the question asks
for further information about it, namely what this place is. The question
can therefore be paraphrased using a definite description corresponding
to the referent, as in (45).

(45) The place where you're going to send the bagels – what is it?

Consequently, Maximal Givenness can also account for why the context
licenses *wh*-in-situ in this example.

    I will now examine whether it can also account for (35). This example
is trickier in that the question is apparently licensed by non-linguistic
context. (The actual context is not reported in Bobaljik & Wurmbrand
(2015), from where I took the example.) Yet recall that under the proposal

for French choice function *wh*-in-situ, non-linguistic context can also make the relevant meaning salient (see Chapter 3 for discussion). In (35), the non-linguistic context we don't know seems to make salient for the speaker that there is a specific place where the major wants the stuff. This place is the referent for the *wh*-phrase and the question merely requests further information about it. The paraphrase using a definite description in (46) is therefore a good rendition of the interpretation of the question.

(46) The place where you want the stuff – what is it?

Consequently, the question in (35) may also be regarded as Maximally Given. This is however less straightforward than in earlier cases, as no context is given for the original example.

I will now extend the proposal to test how far Maximal Givenness gets me in accounting for the disdainful tone of the example in (37), repeated here as (47).

(47) A: They're planning to buy a new house.
     B: And they're going to pay for it with WHAT, love and hope?

                                            [Bolinger 1978: 131, ex. 260]

In (47), the speakers seem to know that love and hope is all *they* have to pay the house with. The CSM in this example is that there is a specific thing that *they* imagine they will pay the house with, which is love and hope. That is, *love and hope* is the proposed answer to the question. The question might therefore be paraphrased using a definite description as in (48).

(48) The thing they imagine they can by a house with
     – what is it? Love and hope?

As it is clear that love and hope does not buy houses, this question has a sarcastic edge to it. Under this analysis, the question in (47) could be considered to be Maximally Given.

Finally, consider the routine of a courtroom interrogation (cf. (30) above) or a police investigation. A purpose of a courtroom interrogation or police investigation is to establish the details surrounding an event, e.g. a crime. An investigator routinely has to know certain facts: did the event indeed take place, when exactly and where did it take place, where were all relevant people at that time etc. I suggest that an investigator whose job it is to establish such facts, relatively easily perceives the relevant meanings as contextually salient. The example in (49) comes from the British detective series 'Scott & Bailey' (series 3, episode 3).

(49) As part of a murder investigation, a detective is conducting an interview with the son of the murdered man. She asks him:

Going back, the last time you spoke to your dad was WHEN?

In this interview, there has been no previous mention of the last conversation between father and son. Yet it seems that the context of having to establish the facts surrounding the murder makes salient for the detective that there is a specific time at which the son last spoke to his dad, which is evidenced by the definite article *the*. The *wh*-in-situ question requests further information about this referent for the *wh*-phrase, namely when this last time was. The question can also be paraphrased as in (50).

(50) Your last conversation with your dad – when was it?

Consequently, the question in (49) is Maximally Given. This predicts that *wh*-in-situ is licensed relatively easily in settings in which one has to establish the details surrounding a specific event like a crime, which may be why courtroom interrogations are among the first known contexts for *wh*-in-situ in English (Postal 1972).

All in all, while this section leaves various issues to be worked out and established further by future research, Maximal Givenness goes a long way towards accounting for the English and German examples presented here. It is also in accordance with the intuition behind the existing

proposals. If the contextual restriction in English and German *wh*-in-situ can indeed be analysed as Maximal Givenness, this would suggest that the contextually supplied choice function I proposed for French choice function *wh*-in-situ is also present in contextually restricted cases of *wh*-in-situ in English and German. This would explain why the *wh*-phrase remains in-situ in these questions.

5.2 Other (related) similarities

In addition to a contextual restriction, *wh*-in-situ in English and German has some other (related) properties in common with choice function *wh*-in-situ in French. In this section, I examine these other shared properties.

Obviously, as in French, the *wh*-phrase in the English and German questions remains in-situ.

Moreover, like French choice function *wh*-in-situ, the English and German in-situ *wh*-questions do not display intervention effects (Pires & Taylor 2009; Poschmann 2015). This is illustrated in (51) and (52), which respectively contain *nur* 'only' and 'not'. Of course, the question must be given including the intervener, i.e. Maximally Given (like in French, see Chapter 5).

(51) A: Wir haben die Texte untereinander aufgeteilt.
        Jeder liest nur einen Text und stellt ihn dann den anderen vor.
        Thomas liest nur Karttunen, Annika nur Groenendijk.

        'We have distributed the texts amongst us.
        Each of us reads only one text and then presents it to the others.
        Thomas reads only Karttunen, Annika only Groenendijk.'

    B: Und Du liest *nur* WAS?
       and you read only what
       'And you read only WHAT?'

                                        [Poschmann 2015: 131, ex. 69, glosses]

(52) A: There are several things that Anna and Paul do not eat
when we go out to dinner.

B: I know that Anna doesn't eat fish.
And Paul, he does*n't* eat WHAT?

<div align="right">[Pires & Taylor 2007: 11, ex. 27]</div>

In addition, to the extent that the English and German *wh*-in-situ
questions can be analysed as Maximally Given, they display a non-
standard interpretation, like French choice function *wh*-in-situ. I already
mentioned that a question like in (34), repeated here as (53) can be
paraphrased as in (45), repeated as (54a); I have been using this as a
convenient way to establish Maximal Givenness.

(53) A: I'm going to send the sourdough bread to the Southern Bakery,
and the croissants to Barringers.
B: I see, and the bagels you're going to send WHERE?

<div align="right">[Ginzburg & Sag 2000: 280, ex. 65]</div>

The interpretation of the question in (53), as brought out by the
paraphrase in (54a), is different from the meaning of a regular *wh*-
question, as in (54b).

(54) a. The place where you're going to send the bagels – what is it?
b. Where are you going to send the bagels?

A regular *wh*-question denotes a set of propositions (Hamblin 1973). In the
case of (54b), these take the form 'you are going to send the bagels to
Barringers', 'you are going to send the bagels to Better Bread', 'you are
going to send the bagels to the Bread shop', etc. The question in (54b) asks
what proposition in this set is true. In contrast, as with French choice
function *wh*-in-situ, the referent for the *wh*-phrase in (53) is fixed. I
suggested in Section 5 of Chapter 5 that this type of meaning corresponds
to that of a singleton-set of propositions, i.e. a set with only one
proposition without alternatives, and analysed the lack of alternatives as a
result of the presence of a choice function.

The accentuation pattern of *wh*-in-situ questions in English and German is also in line with Maximal Givenness. The prosody of these questions differs from that of *wh*-fronted questions with narrow focus on the *wh*-phrase (Beck & Reis 2018; Poschmann 2015; Reis 1992; 2012). In *wh*-fronted questions with narrow focus on the *wh*-phrase, the focal accent falls on the syllable bearing lexical stress, as in (55a) with the accent on *SUB*. Yet in *wh*-in-situ questions, the focal accent must fall on the *wh*-part *which*, as in (55b), and the rest of the sentence must be deaccented.[65]

(55) a. [Oh, Tom is a teacher.] Which SUBject does he teach?
      b. Tom teaches WHICH subject / *which SUBject?

[Beck & Reis 2018: 371-372, ex. 3e and 4e]

This seems to prosodically mark a difference discussed in the previous section, i.e. that between narrow focus on the *wh*-phrase (55a) and Maximal Givenness (55b).[66] When a question is Maximally Given, the focus is only on the *wh*-word, excluding the restriction. The restriction is given and in English and German, givenness is marked by deaccentuation (see Chapter 3). The accentuation pattern described above is therefore predicted by Maximal Givenness. In French, post-focal givenness is less consistently marked than in the Germanic languages (Féry 2014), as was discussed in Chapter 4. Also, post-focal givenness marking, if present, seems to be most common in complete phonological phrases (and a restriction is not a complete phonological phrase) (Destruel & Féry 2015; Féry 2014; Hamlaoui et al. 2012). The difference between a focus on the *wh*-word and a focus on the *wh*-phrase may therefore not be marked in French. Indeed, I observed no givenness compression of the restriction in the prosody experiment in Chapter 4. While I did not discuss it in that chapter, the questions with a narrow focus on the *wh*-word were Maximally Given, or at least allowed for this interpretation (cf. 'semi-

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[65] Also, in polysyllabic *wh*-phrases in German, the accent must fall on the '*wh*-part' of the polysyllabic *wh*-word, e.g. on *WA* in *warum* 'why', unlike in *wh*-fronted questions.

[66] Poschmann's (2015) proposal also means to account for the deaccentuation, but as I explained, it does not make the distinction with narrow focus.

salient' in Chapter 5). Yet they showed no givenness compression of the restriction. This suggests that Maximal Givenness is prosodically marked in English and German, but apparently not in French, due to independent prosodic properties of the languages.

Finally, *wh*-in-situ in English and German is infelicitous in indirect questions (Bobaljik & Wurmbrand 2015).[67] Example (56) can be compared with (35) above. In (57), the *wh*-in-situ question in (57a) contrasts with the *wh*-fronted question in (57b).

(56) *I wonder I should put this stuff WHERE.
      Intended: 'I wonder where I should put this stuff.'

(57) a. *Stark hat gefragt diese Teilhaber erreichen wir WIE?
        Stark has asked these partners reach   we how

    b. Stark hat gefragt WIE wir diese Teilhaber erreichen.
       Stark has asked how we these partners   reach
       'Stark asked how we can reach these partners.'

                        [Bobaljik & Wurmbrand 2015: 17, ex. 8b and 9]

As discussed in Chapter 2 (and confirmed for covert movement *wh*-in-situ in Section 3 above), *wh*-in-situ is also infelicitous in indirect questions in French. Although there is no separate evidence that choice function *wh*-in-situ is unacceptable, there are no indications that it differs from covert movement *wh*-in-situ in this respect, since the literature on *wh*-in-situ in indirect questions does not report much data variation (see Chapter 2).

To summarise Section 5, I explored to what extent the properties of *wh*-in-situ in English and German resemble those of French choice function *wh*-in-situ. I noted that while the contextual restriction in English and German *wh*-in-situ requires further research, Maximal Givenness goes a long way towards analysing the relevant examples. This analysis is also in accordance with the intuitions behind previous

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[67] Bobaljik & Wurmbrand (2015) suggest that *wh*-in-situ questions in *wh*-fronting languages are unacceptable cross-linguistically.

proposals. English and German *wh*-in-situ questions share several other (related) properties with French choice function *wh*-in-situ as well. The relevant features of English and German *wh*-in-situ are listed in Table 9. Of the features in this table, only the prosodic feature differs from choice function *wh*-in-situ in French, which seems due to independent prosodic properties of the languages.

Table 9. Properties of *wh*-in-situ in English and German

ENGLISH/GERMAN *WH*-IN-SITU
wh-phrase remains in-situ
Maximal Givenness (requires further research)
non-standard interpretation
givenness deaccentuation of the restriction[68]
no intervention effects
infelicitous in indirect questions

Based on the above, the choice function account proposed in Chapter 5 seems like a promising direction of research for contextually restricted *wh*-in-situ in English and German.

In the next section, I compare *wh*-in-situ in English and German to echo questions. In Section 7 of Chapter 5, I showed that the type of context that licenses the use of an echo question is such that echo questions are always Maximally Given. This means that the context in which an echo question is uttered always licenses the use of a choice function.

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[68] More precisely: givenness deaccentuation of everything but the *wh*-part of the *wh*-word, including for instance the syllable *rum* in a German polysyllabic *wh*-word like *warum* 'why'.

6 Comparison with echo questions

Echo questions and non-echoic *wh*-in-situ questions in English and German share many characteristics, yet still differ in other respects. In this section, I first list the similarities between the two question types, before turning to the differences.

Obviously, both types of questions are *wh*-in-situ questions in two otherwise *wh*-fronting languages.

Furthermore, echo questions have a non-standard interpretation that is consistent with the denotation of a singleton-set of propositions, even more clearly so than non-echoic *wh*-in-situ questions. In the echo question in (58), speaker B's perception is that speaker A said that John bought a specific thing – speaker B just did not hear what this thing was.

(58) A: John bought #####[noise].
     B: John bought WHAT? (I did not hear you.)

The referent for the *wh*-phrase in (58) is fixed. Parallel to (54a) above, the question can therefore be paraphrased as in (59) (see also Section 2.3 of Chapter 3).

(59) The thing of which you said that John bought it – what is it?

Whatever the answer to the echo question is, it refers to the part of speaker A's utterance that speaker B did not hear. As I suggested in Chapter 5 for French choice function *wh*-in-situ, the denotation of the echo question is therefore not a set of alternative propositions, but a singleton-set containing one proposition (see Section 5 of Chapter 5 for more detail). In the case of an echo question, this proposition expresses the content of the preceding utterance.

Moreover, while I already demonstrated in Chapter 5 that echo questions are always Maximally Given, this is not just a consequence of the echoing character: it is a licensing requirement. For instance, while the echo question in (60a) is acceptable, the same question in (60b) is not.

(60) a. A: The US president is in town.
        B: The WHO is in town?

     b. A: Obama/Michelle's husband is in town.
        B: #The WHO is in town?

                                        [Beck & Reis 2018: 380, ex. 23c]

This must be because (60a), but not (60b) makes the question Maximally
Given including the definite article.

    The fact that echo questions are licensed by Maximal Givenness is
also illustrated by their possible clause-type characteristics. As is shown in
(61) and (62), echo questions can echo other types of utterances than
declarative sentences (Artstein 2002; Sobin 1990; 2010).

(61) A: What did Dracula drink at Mary's party?
     B: What did WHO drink at Mary's party?

(62) A: Did Mary have tea with Cleopatra?
     B: Did Mary have tea with WHO?

                                        [Sobin 2010: 132, exs. 3ab and 4ab]

Sobin (2010) claims that echo questions must 'copy' the clause-type
characteristics of the previous utterance, like the *wh*-phrase in (61) and
the inversion in (62). He points to the contrast between (61) and (62) on
the one hand and (63) and (64) on the other.

(63) A: Did Mary have tea with Cleopatra?
     B: *Mary had tea with WHO?

                                        [Sobin 2010: 132, ex. 3ad]

(64) A: What did Dracula drink at Mary's party?
     B: *Did who drink what at Mary's party?

                                        [Sobin 2010: 143, ex. 38ad]

However, I would like to propose that the problem with (63) and (64) is that the previous utterances do not make them Maximally Given. An echo question *can* have different clause type characteristics than the preceding utterance, if it is Maximally Given (65) (see also Beck & Reis 2018).

(65) a. A: Call the pope immediately!
        B: I'm supposed to call WHO?

    b. A: Could Paul be schizophrenic after all?
        B: You think Paul is WHAT?

[Beck & Reis 2018: 376, ex. 16ab]

(66) shows that (65a) is Maximally Given by providing a paraphrase using a definite description. This definite description adequately reflects what is made salient by speaker A's utterance, i.e., it corresponds to a contextually given referent.

(66) The person of whom you said that I'm supposed to call him
     – who is it?

That is, it is salient for speaker B in (65a) that speaker A said that he (speaker B) is supposed to call someone. However, a paraphrase using a definite description of the echo question in (63), as in (67), does not adequately reflect what the context makes salient, i.e. it does not correspond to a contextually given referent.

(67) The person of whom you said that Mary had tea with him – who is it?

The context in (63) does not make salient that speaker A said that Mary had tea with a person. Consequently, the question in (63) is not Maximally Given in this context. I suggest that this is why it is infelicitous, rather than because it must copy the clause-type characteristics of the previous utterance. All of this shows that echo questions are licensed by Maximal Givenness, even more clearly so than non-echoic *wh*-in-situ questions.

In line with Maximal Givenness, the focal accent in echo questions in English and German must fall on the *wh*-word rather than on the restriction, while the rest of the sentence is deaccented (Beck & Reis 2018; Poschmann 2015; Reis 1992; 2012). I demonstrated this above for non-echoic *wh*-in-situ questions (55).

In addition, echo questions also do not display intervention effects (68), cf. Chapter 5 for French (Beck & Reis 2018; Poschmann 2015; Reis 2012).

(68) Sabine: Nur Peter hat ein Motorrad gekauft.
               'Only Peter has bought a motorcycle.'

     Thomas: *Nur* Peter hat WAS gekauft?
              'Only Peter has bought WHAT? '

                                              [Poschmann 2015: 145, ex. 1]

Finally, like non-echoic *wh*-in-situ questions, echo questions with one *wh*-phrase are infelicitous as indirect questions (69) (Ginzburg & Sag 2000; Sobin 2010).[69]

(69) a. *We wondered [Dana saw WHAT].   (echo)
     b. We wondered [what Dana saw].   (information seeking)

                                              [Ginzburg & Sag 2000: 271, ex. 40a]

Despite of all these similarities between echo questions and non-echoic *wh*-in-situ questions, the two classes of questions are distinct.

First, unlike non-echoic *wh*-in-situ questions, echo questions have a reprise function, cf. the 'echoing' character (see also Chapter 3). Echo questions raise a question regarding an aspect of the previous utterance,

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[69] The reason why a question like (69a) is infelicitous may be that the preceding utterance that would license it is ungrammatical (i).

  (i) *We wondered Dana saw #####[noise].

Echo questions with multiple *wh*-phrases in which one of them has moved to Spec CP are acceptable as indirect questions. In that case, there is something that satisfies the question selection of the verb.

which is reflected in the paraphrases above (*the thing of which you said that... – what/who is it?*).

The second difference is that the non-standard form (e.g. *a what*) that I discussed in Section 2 above for French is widely available in echo questions. Not only can the *wh*-phrase take the position of an NP as in the rating study with *des quoi* 'DES quoi', in Bolinger's (1987: 263) words, the *wh*-phrase 'can do service for almost anything' (70). Nevertheless, it still has to respect constituent structure (Artstein 2002, citing McCawley 1987).

(70) A: The dog wanted to eat the book.

    B: a. The dog wanted to eat the WHAT?
        b. The dog wanted to eat WHAT?
        c. The dog wanted to WHAT?
        d. The dog wanted WHAT?
        e. The dog WHAT?
        f. The WHAT?
        g. WHAT?   [Bolinger 1987: 263]

The *wh*-phrase can even replace part of a word (71) (Cooper 1983; Janda 1985).

(71) She believes in WHAT-jacency?

                                    [Janda 1985: 175, ex. 3c]

Finally, echo questions may display non-declarative clause-type characteristics, while non-echoic *wh*-in-situ questions always display the clause-type characteristics of a declarative (Ginzburg & Sag 2000; see also Poschmann 2015: 138-141). Examples (61) and (62) showed that echo questions may take non-declarative aspects like a fronted *wh*-phrase (61) and inversion (62). These clause-type characteristics also include other features. Echo questions with an interrogative structure license an NPI, while echo questions with a declarative form do not (Noh 1998; Poschmann 2015). Similarly, modal particles in German that are only felicitous in interrogatives, are also felicitous in echo questions with an

interrogative form, but not in echo questions with a declarative form (Beck & Reis 2018; Poschmann 2015). So echo questions can really display the clause-type characteristics of different sentence types (Reis 1992).

In summary, like non-echoic *wh*-in-situ and even more clearly, echo questions are licensed by Maximal Givenness. They also display a prosody that is in line with this, are infelicitous as indirect questions (if they contain only one *wh*-phrase), do not display intervention effects and have a non-standard interpretation consistent with a singleton-set of propositions. Unlike non-echoic *wh*-in-situ, they echo a previous utterance (they have a reprise function), are widely available with a non-standard form (cf. *a what*) and may display the characteristics of a non-declarative sentence-type.[70]

The fact that echo questions must be Maximally Given suggests that they are interpreted via a contextually supplied choice function, like choice function *wh*-in-situ in French.[71] However, other properties of echo questions are unique to echo questions (as also confirmed for French by the rating study targeting questions with *des quoi* in Section 2). All of this suggests that French choice function *wh*-in-situ and echo questions are both licensed by a contextually supplied choice function, while the structure of these two question types is still distinct. (Part of) the difference may lie in the presence of another question operator. I mentioned in Chapter 5 that I assume that non-echoic *wh*-questions contain a question operator in CP, cf. Heim's (2000) interpretation of Karttunen (1977). Yet it has been suggested in previous literature that echo questions contain a different type of question operator, an echo question operator (Dayal 1996; Sobin 2010). If non-echoic choice function

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[70] They also seems to differ regarding intervention effects. While my informants did not accept an information seeking *wh*-in-situ question with *seulement* 'only', even if it was Maximally Given, echo questions with *seulement* 'only' are acceptable (see Chapter 5).

[71] The fact that the *wh*-phrase in echo questions may take the place of many types of constituents (cf. (70) above) is an indication that the choice function in echo questions is a generalised choice function cf. Yanovich (2005): a choice function that is not just available for *wh*-DPs but for many types of constituents. To the extent that non-echoic choice function *wh*-in-situ is felicitous with a form like *a what/des quoi* 'DES what', I assume the availability of a generalised choice function in those questions as well.

wh-in-situ contains a regular question operator while echo questions contain an echo question operator, this may explain (some of) the differences between the two question types. I leave the details of this proposal to be worked out by future research.

7   General discussion

Building on Chapter 5, which discussed intervention effects, the current chapter extends the proposal that French speakers employ two mechanisms to interpret *wh*-in-situ questions. First, it investigated several other properties of questions interpreted via the two mechanisms. I also suggested that certain speakers only have choice function *wh*-in-situ, while other speakers have both mechanisms. This explains a number of controversies in the literature. Second, the chapter showed that the choice function account is also a promising direction of research for contextually restricted *wh*-in-situ in English and German.

While the chapter investigated the felicity of covert movement *wh*-in-situ in long-distance questions and inside strong islands, it did not do so for choice function *wh*-in-situ. This is hard to investigate in French, as a question containing an in-situ *wh*-phrase in a long-distance question or inside a strong island can always be interpreted via covert movement. If there is no intervener or non-standard form like *des quoi* 'DES what' in French, it is not possible to know which mechanism is used to interpret *wh*-in-situ, if the question is Maximally Given.[72] In English and German, *wh*-in-situ is felicitous in long-distance questions and inside strong islands (Bobaljik & Wurmbrand 2015; Pires & Taylor 2009; Reis 1992).

The acceptability of French choice function *wh*-in-situ in indirect questions was also not investigated directly. *Wh*-in-situ in indirect questions is infelicitous in English and German and, according to Bobaljik

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[72] The contexts that Oiry (2011) used to elicit long-distance questions would license the use of a choice function under my proposal: both the context that she calls 'presuppositional' and the context she calls 'non-presuppositional' make the question Maximally Given. However, as an interpretation via covert movement can never be ruled out in such a context, this does not shed any light on the issue.

and Wurmbrand (2015), in all *wh*-fronting languages with restricted *wh*-in-situ. Moreover, covert movement *wh*-in-situ is infelicitous in indirect questions in French and Chapter 2 showed that there is not much data variation regarding this topic. This makes it plausible that French choice function *wh*-in-situ is also infelicitous in indirect questions. (I come back to this below.)

The infelicity of covert movement *wh*-in-situ in indirect questions is surprising from a cross-linguistic perspective. In true *wh*-in-situ languages like Mandarin Chinese, Japanese or Korean, *wh*-in-situ is the standard, also in indirect questions. It has been suggested that a second difference with true *wh*-in-situ languages concerns strong island effects (e.g. Cheng & Rooryck 2000; Mathieu 2002). French *wh*-in-situ questions have been claimed to exhibit strong island effects, even for *wh*-arguments. Yet Mandarin Chinese does not display strong island effects if the *wh*-phrase is an argument (i.e. not an adverbial) (Reinhart 1998; Tsai 1994b). However, the rating study reported in Section 3 did not confirm that French *wh*-in-situ questions with an argument *wh*-phrase inside an adjunct island are unacceptable. While such questions were not judged to be maximally natural, they were not judged to be totally unnatural either. I have no explanation for why these questions, which I assumed involve covert movement, are not clearly unacceptable inside an adjunct island. French covert movement *wh*-in-situ is not set apart by the occurrence of intervention effects, since true *wh*-in-situ languages like Japanese and Korean also display intervention effects (Beck & Kim 1997; Tanaka 1997). This leaves two properties that clearly distinguish French *wh*-in-situ from true *wh*-in-situ languages. One is the infelicity as indirect questions, and the other is the fact that *wh*-in-situ is not the only strategy of forming *wh*-questions in French.

In Section 4, I hypothesised that there are speakers whose grammar only contains a choice function to interpret *wh*-in-situ (Type A speakers), whereas other speakers also have the covert movement option (Type B speakers). There seems to be a tendency for older literature to present data that, under my analysis, represent a Type A grammar (e.g. Boeckx et al. 2001; Chang 1997; Cheng & Rooryck 2000), whereas later literature is

more often consistent with a Type B grammar (e.g. Baunaz 2011; Reinhardt 2019). However, this is far from a clear correlation across all publications.

Nevertheless, the picture is consistent with the idea that the language is changing, or that a particular language change is almost complete. The grammar of Type A speakers may reflect an earlier variety of the language. This variety would be a *wh*-fronting language that only allows for contextually restricted *wh*-in-situ, in this sense similar to languages like English and German. At some point, choice function *wh*-in-situ questions may have been subject to a process of re-analysis. Covert movement is a mechanism that was already present in the grammar to interpret multiple *wh*-questions. It seems plausible that certain speakers began to use covert movement to interpret single *wh*-in-situ questions as well, thus developing a Type B grammar. This process may have been facilitated by the use of choice function *wh*-in-situ in contexts that made the relevant meaning 'semi-salient', i.e. contexts that allow for an interpretation of Maximal Givenness as well as an alternative interpretation (see Chapter 5). In this way, covert movement may have become a second mechanism to interpret *wh*-in-situ questions. This resulted in French *wh*-in-situ questions that are felicitously used out of the blue, at least for younger speakers (as confirmed by the rating study in Section 3).

Would such a language change also help to account for the contradictory data in the literature regarding the felicity of *wh*-in-situ in long-distance questions (see Chapter 2 for references)? If so, the hypothesis would have to be that covert movement *wh*-in-situ allows for long-distance questions, while choice function *wh*-in-situ does not. As I explained above, the hypothesis that choice function *wh*-in-situ is infelicitous in long-distance questions cannot be tested in current day French. English and German *wh*-in-situ do allow for long-distance *wh*-in-situ. I suggested in Section 5.2 that it may be worth pursuing a choice function account for English and German *wh*-in-situ as well. If French choice function *wh*-in-situ is infelicitous in long-distance questions, this would constitute a difference with English and German that a choice function account of English and German *wh*-in-situ would have to explain.

The hypothesised language change does not yet explain the infelicity of covert movement *wh*-in-situ in indirect questions, in which French differs from true *wh*-in-situ languages. One possible property that distinguishes true *wh*-in-situ in languages like Mandarin Chinese, Japanese and Korean from French is the fact that the *wh*-words in the former are *wh*-indefinites. They do not have inherent quantificational force, but rather behave like variables, which can have interrogative as well as non-interrogative interpretations (Cheng 1991). They receive an interrogative interpretation if they are bound by a *wh*-operator (Tsai 1994a). In other words, these true *wh*-in-situ languages have a *wh*-operator/marker base-generated in the left periphery, including in the case of an indirect question (Cheng 1991 and Tsai 1994a). Nonetheless, it is not clear why covert movement of a *wh*-phrase cannot satisfy the selection restrictions imposed by indirect questions in French. The same is true for choice function *wh*-in-situ in several *wh*-fronting languages (cf. Bobaljik & Wurmbrand 2015). I leave these issues for future research.

8 Conclusions

In the previous chapter, I suggested that French has two different mechanisms to interpret *wh*-in-situ, covert movement and a choice function, the latter of which is licensed by Maximal Givenness. In this chapter, I extended this proposal. The first half of the chapter investigated several properties of questions interpreted via the two mechanisms. I also suggested that certain speakers only have the choice function option, which explained several points of data confusion in the literature. The second half of the chapter explored to what extent the choice function account is also a promising direction of research for *wh*-in-situ in *wh*-fronting languages like English and German.

I first reported on a rating study that targeted questions of the form *Tu as acheté des quoi*, lit. 'You have bought DES what', where *des* is the plural indefinite article. The results showed that such questions are not generally acceptable ('natural') in a context designed to make them Maximally Given, but that they are judged more natural in such a context than in an out of the blue context. One item, which had some properties that strengthened the contextual salience of the indefinite article, was rated reasonably high. I hypothesised that it is in principle possible to interpret a *wh*-in-situ question with *des quoi* 'DES what' via a choice function, but not via covert movement. However, in many cases the speaker may not perceive the indefinite article as salient enough to really make the question Maximally Given (unless the article is mentioned in the previous utterance, which would result in an echo question). In addition, the study confirmed that echo questions with *des quoi* 'DES what' are felicitous in French.

The chapter then returned to the data variation in Chapter 2 and investigated this from the perspective that French has two mechanisms to interpret *wh*-in-situ. I first reported on a rating study that examined several properties of *wh*-in-situ in an out of the blue context. Specifically for participants of age 20-35, I investigated the felicity of *wh*-in-situ a) in indirect questions, b) with an argument *wh*-phrase inside a strong adjunct

island and c) in long-distance questions (with indicative mood and finite tense).

I then suggested that the data variation regarding the extra-strong presupposition, the large sentence-final rise and intervention effects can be accounted for by the combination of two factors: firstly, the existence of speakers with two different grammars and secondly, the difficulty of construing a context that makes the question Maximally Given when this question contains an intervener. In particular, I hypothesised that certain speakers (Type A speakers) only have the choice function option to interpret *wh*-in-situ, while other speakers (Type B speakers) also have the covert movement option. I proposed that what gives the impression of an extra-strong presupposition is Maximal Givenness, thus explaining where the appearance of an extra-strong presupposition comes from. Consequently, Type A speakers would observe that French *wh*-in-situ questions involve an extra-strong presupposition, while for Type B speakers, *wh*-in-situ is (also) acceptable out of the blue. The large sentence-final rise was analysed as a correlate of narrow focus marking. Choice function *wh*-in-situ questions have a narrow focus on the *wh*-word and therefore standardly display such a rise. Yet covert movement *wh*-in-situ questions may have different focus structures, so Type B speakers would not necessarily observe such a rise.

This leads to the overview of the properties of French *wh*-in-situ questions for speakers aged 20 to 35 in Table 10. In this table, *ok* means 'acceptable' and ^ means 'acceptable in English and German'. Note that while choice function *wh*-in-situ does not involve intervention effects as such, such questions are only acceptable with an intervener if the speaker can construe the necessary context.

Table 10. Properties of French *wh*-in-situ questions interpreted via the two mechanisms

PROPERTY	CHOICE FUNCTION *WH*-IN-SITU	COVERT MOVEMENT *WH*-IN-SITU
Maximal Givenness	yes	no
Ok in long-distance question	?^	yes
Ok in indirect question	no	no
Ok inside adjunct island	?^	intermediate
Intervention effects	no	yes
Sentence-final rise	yes	depends on focus
Non-standard interpretation	yes	no
Ok with *des quoi* 'DES what'	more	no

Subsequently, I argued that the choice function account is also a promising direction of research for *wh*-in-situ questions in *wh*-fronting languages like English and German. Although this should be investigated further, I suggested that Maximal Givenness goes a long way towards analysing the contextual restriction of *wh*-in-situ in these languages. The chapter also showed that *wh*-in-situ questions in English and German share several other (related) properties with French choice function *wh*-in-situ. In addition, it demonstrated that *wh*-in-situ in English and German shares many characteristics with echo questions, while still differing in other respects.

Finally, the chapter made some new observations about echo questions. Following Beck & Reis (2018), I showed that echo questions can have different clause type characteristics than the preceding utterance, contra Sobin (2010). Moreover, the chapter demonstrated that echo questions must be Maximally Given and display a non-standard interpretation that is consistent with the denotation of a singleton-set of propositions. I therefore proposed that echo questions are interpreted via a contextually supplied choice function, like French choice function *wh*-in-situ, although the structure of these two types of question is still distinct in ways that need to be clarified by future research.

7 Conclusion

This dissertation investigated the properties of French *wh*-in-situ questions from two perspectives, both of which relate to context. These are the information structure of the sentence (i.e. focus and givenness) and the distinction between echo and information seeking questions. In this final chapter, I discuss the insights yielded by the research. I begin with the results regarding the properties of French *wh*-in-situ questions (Section 1). Then I consider the other outcomes of the dissertation, which concern echo questions (Section 2), focus and givenness (Section 3), methodological considerations (Section 4) and the cross-linguistic picture (Section 5).

1   Properties of French *wh*-in-situ questions

In Chapter 2, I laid out six (alleged) properties of French *wh*-in-situ questions that were the subject of debate (1).

(1) a. occurrence of intervention effects
   b. extra-strong presupposition
   c. prosody, e.g. sentence-final rise
   d. infelicity as indirect questions
   e. (in)felicity inside a strong island
   f. (in)felicity as long-distance questions

In Chapters 5 and 6, I proposed that French has two different mechanisms to interpret *wh*-in-situ, covert movement (2) and a choice function (3), which yield questions with different properties.

(2) *Covert movement* wh-*in-situ*

[_{CP}   .....   *wh*-phrase]
                              COVERT

(3) *Choice function* wh-*in-situ*

⟦tous les témoins ont reconnu qui ⟧ =
{p | p = all the witnesses have recognized CH(person)}

In (3), *CH(person)* represents the *wh*-phrase *qui* 'who'. The choice function ranges over the set of all relevant persons and selects one person from the set. What I propose is a contextually supplied choice function, cf. Kratzer (1998) for specific indefinites: the choice function variable is free and the context determines its value. In order to make a question interpretable, the choice function needs to be recoverable for the interlocutor and for this, a special type of context is necessary. More specifically, I suggested that choice function *wh*-in-situ is felicitous in a context that makes the entire question given in the sense of Büring (2016), which I called 'Maximally Given'. A question is Maximally Given when a Contextually Salient Meaning (CSM) entails the answer to the question. When this is the case, the question can be paraphrased using a definite description corresponding to a contextually given referent, as in the examples in Chapters 5 and 6.

A *wh*-in-situ question interpreted via a choice function displays a non-standard meaning. Rather than asking which referent constitutes the answer to the question, it merely requires further specification of the identity of a referent that is already given. I suggested that in contrast to covert movement, choice functions do not yield alternatives. In *wh*-questions, a question operator turns the sentence from a proposition into a set of propositions. When (covert) movement is absent, the resulting sentence does not denote a set of alternative propositions (which arise from movement), but a singleton-set of propositions as in (3), i.e. a set consisting of a single proposition. This is in accordance with the non-

standard interpretation and the contexts in which choice function *wh*-in-situ can be used.

Under this proposal, a choice function is only available if a French *wh*-in-situ question is Maximally Given; otherwise, covert movement is needed. Covert movement *wh*-in-situ and choice function *wh*-in-situ display different properties. In addition, I hypothesised in Chapter 6 that not all speakers have both these mechanisms to interpret a *wh*-in-situ question. In particular, certain speakers, which I referred to as Type A speakers, only have the choice function option, while to other speakers, which I called Type B speakers, covert movement *wh*-in-situ is also available. The proposal of two different interpretation mechanisms, one of which is available to only part of the speakers, explains much of the observed data variation. In what follows, I summarise the results concerning the occurrence of intervention effects (Section 1.1), the extra-strong-presupposition (Section 1.2), prosody, including the sentence-final rise (Section 1.3) and finally indirect questions, adjunct islands and long-distance questions (Section 1.4).

1.1 Occurrence of intervention effects

Some authors state that French *wh*-in-situ questions exhibit intervention effects, other authors contradict this and yet other authors state that intervention effects are present in part of the data. In addition, there is variation of judgments within the literature that acknowledges the existence of intervention effects. This concerns variation among sentences with different interveners as well as among sentences with the same intervener, including identical sentences.

Chapter 5 of the dissertation builds on an observation by Starke (2001) and Baunaz (2005; 2011; 2016), who note that a particular type of context voids intervention effects. I proposed that this type of context is characterized by the fact that it makes the question Maximally Given, which licenses the use of a choice function. The questions that are Maximally Given include both information seeking choice function *wh*-in-situ and echo questions. I assumed that intervention effects arise when an intervener blocks the *wh*-phrase from moving covertly to the left

periphery. So when Maximal Givenness licenses the use of a choice function, there is an alternative for the intervention effects configuration. I suggested that the effect of context also plays a role in judgments of sentences in isolation, as speakers are then free to envisage their own contexts.

The analysis accounts for variation among different interveners, but unlike Baunaz's (2011) proposal, without assuming the existence of three types of interveners with different feature compositions. Instead, I suggest that it is harder to envisage the necessary context for some interveners than for others. In addition, the analysis accounts for variation among sentences with the same intervener (unlike Baunaz's proposal), as subtle differences among sentences can affect how easy or difficult it is to construe the necessary context. In other words, the acceptability of a *wh*-in-situ question with an intervener depends on whether a speaker (of either Type A or Type B) is able to envisage the necessary context. As some speakers will be better at this than others, the proposal predicts speaker variation. I suggested that it is more difficult to construe the context that is needed for a question with an intervener than for the same question without the intervener. As a result, a Type A speaker (who only has choice function *wh*-in-situ) may accept a particular *wh*-in-situ question, but reject it when an intervener is added.

Givenness, and thus also Maximal Givenness, relies on the notion of contextual salience (more in particular, on my adaptation of Büring's (2016) conception of contextual salience). As I discussed in Chapter 3, contextual salience is somewhat of a slippery notion. This is even more so following my adaptation of it, according to which a speaker's associations may influence what a context makes salient for him/her. As a result, a context may make something salient for one speaker, but not for another, or even at one moment in time but not at another. This vagueness of the notion is difficult. The boundaries of contextual salience are fluid, which is in principle undesirable. Yet, this is exactly in line with the observed data variation regarding intervention effects, which I suggest reflect this vagueness. Under my proposal, the fluid boundaries of contextual salience partly account for the observed data variation.

1.2 Extra-strong presupposition

According to some authors, a French *wh*-in-situ question like (4) 'strongly presupposes' the existence of a value to fill the *wh*-phrase, i.e. an item that Marie bought.

(4) Marie a   acheté quoi ?
    Marie has bought what
    'What is it that Marie bought?'

These authors state that as the speaker of (4) presupposes that Marie bought something and merely requests more detail about the purchase, a negative reply like *rien* 'nothing' is odd.

This issue was controversial: while some authors observe an extra-strong presupposition, other authors state that French *wh*-in-situ questions are not presuppositionally different from *wh*-fronted questions and yet others suggest that a stronger presupposition is present in a subset of the data. Moreover, it was not clear what the conceptual status of the presupposition was or where it might come from.

I proposed in Chapter 6 that the appearance of an extra-strong presupposition is caused by Maximal Givenness. Maximal Givenness is what gives the impression of a strongly presupposed value to fill the *wh*-phrase. Furthermore, I suggested that the apparent contradiction in the literature can be explained by the hypothesis of two types of speakers. In particular, a Type A speaker would observe that French *wh*-in-situ questions are always Maximally Given, giving the impression of an extra-strong presupposition (e.g. Chang 1997; Cheng & Rooryck 2000). Yet a Type B speaker would note that French *wh*-in-situ questions can be used out of the blue (Adli 2006; Hamlaoui 2011) or that only a subset of these questions impose a strong restriction on the context (Baunaz 2011; Starke 2001). This explains the seemingly contradictory data regarding the extra-strong presupposition.

1.3   Prosody, including the sentence-final rise

With respect to prosody, the properties of French *wh*-in-situ questions remained unclear. As I laid out in Chapter 2, much of the debate had focused on the sentence-final pitch movement. Some authors claim that French *wh*-in-situ questions display a large sentence-final rise, other authors contradict this and yet others state that the rise is present in a subset of the data. In addition, a large sentence-final rise has also been claimed to be a feature of echo questions. It was therefore unclear whether echo and information seeking questions are prosodically distinct, and if so, how.

Chapter 4 of the dissertation provided prosodic descriptions of French *wh*-in-situ echo and information seeking questions elicited in a production experiment. The chapter shows that information seeking *wh*-in-situ questions display the following features. There is a high point at the end of the *wh*-phrase, followed by a fall, which I interpreted as a prosodic boundary between the *wh*-phrase and the subsequent PP, cf. Mathieu (2016). Mathieu interpreted the presence of a boundary as a correlate of focus marking, yet the experiment shows that there is also a prosodic boundary between the *wh*-phrase and the subsequent PP in broad focus questions. There was also a high point associated with the *wh*-word (cf. Wunderli (1983) and Gryllia et al. (2016)), although this point was much lower or absent in narrow focus questions; I suggested that this was due to the contrastive topic that preceded the questions in the narrow focus condition. The *wh*-in-situ questions elicited in the experiment displayed at least a (very) small sentence-final rise.

Echo questions display similar tonal movements to information seeking questions, but their pitch is elevated from the final syllable of the *wh*-phrase onwards. Since the area preceding the *wh*-phrase has low pitch, the pitch range within echo questions is extremely large: on average 8.2 semitones. Also, the *wh*-word has a longer duration. Echo questions are not marked by a higher intensity, nor by a sentence-final rise with a larger pitch excursion than in information seeking questions with the same information structure. The experiment shows that French *wh*-in-situ questions are prosodically distinct from echo questions. As I investigated

echo questions of the type expressing auditory failure, this result is unrelated to the emotion of surprise.

In addition, the experiment demonstrates that the sentence-final rise is large in a subset of the French *wh*-in-situ questions (cf. Adli 2004; 2006; Reinhardt 2019; Wunderli 1978; 1982; 1983; Wunderli & Braselmann 1980). Moreover, it shows that the presence of a large final rise is correlated with the presence of a narrow focus. Broad focus questions only display a (very) small sentence-final rise. Yet in narrow focus questions, the high tone on the final syllable of the focus is copied to the final syllable of the utterance; this is a known correlate of focus marking in French. The copied tone raises the pitch on the final syllable of the utterance. Hence, I consider the large sentence-final rise to be a correlate of narrow focus marking.

As a result of the type of context that licenses the use of a choice function, choice function *wh*-in-situ questions always have a narrow focus on the *wh*-word. These questions are therefore expected to display a large sentence-final rise. Consequently, Type A speakers, who only have the choice function option, would observe that French *wh*-in-situ questions standardly display such a rise.

In contrast, covert movement *wh*-in-situ questions may display different focus structures, depending on the context in which they occur. If they have a narrow focus on the *wh*-word, they are expected to display a large sentence-final rise. Yet, if they have broad focus, they are marked by a mostly falling contour; the sentence-final rise in such questions may be extremely small. Speakers with covert movement as well as choice function *wh*-in-situ (Type B speakers) would therefore not observe that all French *wh*-in-situ questions display a large sentence-final rise. Rather, they may note that a large sentence-final rise is optional (Adli 2004; 2006). They may even maintain that French *wh*-in-situ questions display a mostly falling contour (e.g. Mathieu 2002). Under the current analysis, this would suggest that they only investigated questions with broad focus.

1.4   Indirect questions, adjunct islands and long-distance questions

The other three issues mentioned at the beginning of this section, the acceptability of *wh*-in-situ in indirect questions, strong islands and long-distance questions, were investigated in a rating study reported in Chapter 6. The study specifically targeted *wh*-in-situ in an out of the blue context, which I suggested is interpreted via covert movement. It focused on one type of strong island, the adjunct island. Chapter 2 observed that the literature on French *wh*-in-situ questions is fairly consistent in rejecting *wh*-in-situ in indirect questions, while the data regarding *wh*-in-situ inside a strong (adjunct) island and in long-distance questions are not yet clear. The rating study investigated these issues in a population sample of age 20 to 35.

Although the ratings were higher than expected based on the literature, the results confirmed that *wh*-in-situ in an out of the blue context is not acceptable in indirect questions; it is a matter for future research why this is so (see also below). Questions with an argument *wh*-phrase inside an adjunct island received intermediate ratings. While they were not judged to be maximally natural, they are not unnatural either. This was the first experimental study to investigate *wh*-in-situ inside a strong island; future research might investigate the acceptability of questions with other strong islands and an adjunct *wh*-phrase. Long-distance *wh*-in-situ questions were found to be quite natural, cf. Tual (2017a). It is unclear to me why some other studies have come to a different conclusion. There may be an effect of age, since both this study and Tual (2017a) targeted younger speakers. This is however not the whole story, as some older studies also accept *wh*-in-situ in long-distance questions. Chapter 2 mentions several factors that have been claimed to affect the acceptability of *wh*-in-situ in long-distance questions, which may be investigated by future research. However, the study in Chapter 6 shows that for younger speakers, indicative mood, finite tense or an out of the blue context do *not* serve to preclude long-distance *wh*-in-situ. Finally, as the rating study was designed to exclude Maximal Givenness, the acceptability of the long-distance questions confirms that not all

French *wh*-in-situ questions involve a contextual restriction (again for this age group).

In conclusion, for speakers aged 20 to 35, the properties of French *wh*-in-situ questions that were discussed in Chapter 2 can be summarised as in Table 11. In this table, *ok* means 'acceptable' and ^ means 'acceptable in *wh*-in-situ in English and German'.

Table 11. Properties of French *wh*-in-situ questions interpreted via the two mechanisms

PROPERTY	CHOICE FUNCTION *WH*-IN-SITU	COVERT MOVEMENT *WH*-IN-SITU
Intervention effects	no	yes
Maximal Givenness	yes	no
Sentence-final rise	yes	depends on focus
Ok in indirect question	no	no
Ok inside adjunct island	?^	intermediate
Ok in long-distance question	?^	yes

This confirms that the properties of French *wh*-in-situ questions differ from those in typical *wh*-in-situ languages like Mandarin Chinese, Japanese or Korean. Specifically, in contrast to French, true *wh*-in-situ languages also employ *wh*-in-situ in indirect questions, as this is the default option in such languages. The difference between French and true *wh*-in-situ languages regarding adjunct islands is less clear. Such questions are felicitous in Mandarin Chinese, yet received intermediate judgments in French. French *wh*-in-situ in an out of the blue context is not set apart by the occurrence of intervention effects, since true *wh*-in-situ languages like Japanese and Korean also display intervention effects.

2   Echo questions

In the remainder of this chapter, I discuss the insights yielded by the research regarding issues other than the properties of French *wh*-in-situ questions. To begin with, the dissertation made some new observations concerning echo questions.

The production experiment in Chapter 4 is the first study (to my knowledge) that explicitly compared echo questions to information seeking questions with the same information structure, which excludes this as a potential confound. Like echo questions, the information seeking counterparts to which I compared them had a narrow focus on the *wh*-word and were Maximally Given (or allowed for this interpretation, cf. 'semi-salient' in Chapter 5). The type of context that elicited these information seeking questions was modelled on an example by Engdahl (2006: 100, ex. 23), which according to Engdahl voids intervention effects.[73] Yet without the presence of an intervener, it is not possible to determine whether the narrow focus questions in the experiment were interpreted via covert movement or a choice function. Importantly, the experiment demonstrates that French echo questions are even prosodically distinct from information seeking questions with these information structural properties. This supports the idea that echo questions are a separate question type, as also indicated by other properties of echo questions described in Chapters 3 and 6. For instance, Chapter 6 showed that French echo questions are completely acceptable with a non-standard form containing *des quoi* 'DES what', where *des* is the plural indefinite article and the *wh*-phrase therefore replaces an NP rather than a DP.

Following Beck & Reis (2018), Chapter 6 also showed that echo questions can have different clause type characteristics than the

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[73] In Chapter 5, I described the CSM that would make Engdahl's question Maximally Given also as 'semi-salient' (example (43) in Chapter 5), meaning that the context allows for an interpretation that makes the question Maximally Given and also for another interpretation.

preceding utterance, contra Sobin (2010). Moreover, it demonstrated that echo questions must be Maximally Given and display a non-standard interpretation that is consistent with the denotation of a singleton-set of propositions. I therefore proposed that echo questions are interpreted via a contextually supplied choice function, like French choice function *wh*-in-situ. Yet as I just mentioned, echo questions also exhibit properties that are unique to echo questions, indicating that they are a separate question type. I therefore suggested that while they contain a choice function, they are still structurally distinct from French choice function *wh*-in-situ in ways that need to be clarified by future research.

Finally, chapter 3 presented a tentative generalisation regarding the prosody of echo questions as compared to their information seeking counterparts, based on the small sample of languages available. I suggested that in languages with a falling sentence-final intonation in *wh*-in-situ information seeking questions, echo questions seem to display a sentence-final rise, while in languages with a sentence-final rise in information seeking questions, echo questions also display an expanded pitch range. Chapter 4 showed that this generalisation also holds for French, which falls in the second category.

3   Focus and givenness

As I discussed in Chapter 3 of the dissertation, it is often assumed that the focus in *wh*-questions equals the *wh*-phrase, irrespective of the preceding context (e.g. Culicover & Rochemont 1983; Lambrecht & Michaelis 1998). In Chapter 3, I re-examined the (theoretical) arguments given in the literature to support this view and concluded that they are not conclusive. Following Jacobs (1984; 1991), Beyssade (2006), Eckardt (2007) and others, I argued that in some languages, what is focused in *wh*-questions depends on the preceding context, like in declaratives. I suggested that French is one of these languages, which was based on the behaviour of *wh*-fronted questions (Beyssade 2006; Beyssade et al. 2007). The approach was supported by the production experiment in Chapter 4, which demonstrates using different contexts that focus structure may be marked prosodically in *wh*-questions. This confirms the observation by Ladd

(2009) that languages fall into one of two groups in this respect, only one of which marks the *wh*-phrase as the focus irrespective of the context. Ladd also mentions that true *wh*-in-situ languages tend to fall in the group that marks the *wh*-phrase as the focus. So the results of Chapter 4 show that French *wh*-in-situ questions do not behave like questions in true *wh*-in-situ languages in this respect, but rather pattern with the *wh*-fronted questions of the language.

The production experiment also confirms and adds to claims in the literature regarding focus marking in French. A known correlate of focus marking in French declaratives and yes/no questions is 'tone copying', the copying of the high tone (in interrogatives) or low tone (in declaratives) at the final syllable of the focus to the final syllable of the utterance. The production experiment shows that (at least in *wh*-in-situ questions) tone copying is accompanied by a shortening of the final syllable of the utterance. The study also confirms that what is copied is not an abstract tone but an absolute F0 value (defying declination), as originally suggested by Martin (1981). In addition, the results showed that given material preceding the focus is compressed, confirming Touati (1987) and Dohen and Lœvenbruck (2004). Yet, given material following the focus showed no pitch compression, in line with the observation that post-focal givenness compression is not always present in French (Féry 2014).

Finally, I proposed a refinement of the concept of contextual salience, on which focus and in particular givenness are based. I suggested in Chapter 3 that contextual salience should be viewed as a subjective notion, as in the definition of a CSM in (5).

(5) Contextually Salient Meaning (CSM) – my definition
    A meaning is a CSM if it is perceived by the speaker as contextually salient and the speaker has no reason to believe that it is not salient for the interlocutor.

The subjectivity of contextual salience explains why world knowledge and beliefs may play an additional role in focus and givenness, which was not clear before (Büring 2016).

4   Methodological considerations

The dissertation also raised some methodological issues, both regarding the study of intervention effects (Section 4.1) and the investigation of certain topics in prosody research (Section 4.2).

4.1   Intervention effects

In light of the findings of Chapter 5, future research on intervention effects may take context into account in the following ways. To prevent speakers from envisaging their own context, which may result in data variation, judgments of sentences should be obtained in elaborate contexts, which are reported in subsequent publications. In addition, it should be kept in mind that some contexts leave room for multiple interpretations ('semi-salience') and that a speaker can always construe more context than is offered by the researcher. Section 2 of Chapter 6 displays one way of constructing a context that makes the target sentence Maximally Given without leaving much room for other interpretations. Finally, as Chapter 5 showed that subtleties regarding the meaning of the sentence may affect Maximal Givenness, the target sentences should be kept constant when comparing different interveners.

4.2   Prosody: Scripted Simulated Dialogue

For the production experiment in Chapter 4, I designed an elicitation paradigm that I referred to as 'Scripted Simulated Dialogue'. This paradigm might benefit other researchers and I would gladly make the E-Prime Script available. In what follows, I lay out for what kind of studies this paradigm may be used.

Two methods are commonly used to elicit production data for prosody research. In the first, the experimenter presents participants with a series of written (i.e. pre-scripted) sentences to read out loud. The sentences are presented in isolation (e.g. Gryllia et al. 2016) or after a short fragment of context (e.g. Dohen & Lœvenbruck 2004). This method gives very good control over what data are elicited. To compare the prosody of

(parts of) utterances across conditions, the utterances must have the same segmental composition, as segments themselves have different prosodic properties. (For instance, [z] differs from [b].) This is most easily achieved by scripting the target sentences.

The other commonly used elicitation method is the Referential communication task (Yule 1997; e.g. Brown et al.'s 1984 map task). This involves two people performing some task together, which is designed to elicit a conversation that contains the speech of interest. For instance, Ito & Speer's (2006) tree decoration task has a participant instructing another person about how to decorate a Christmas tree. The participant points out objects to hang in the tree, like a small orange drum, which elicits the target utterance *orange drum*. The strength of this method is that it elicits an actual dialogue in the laboratory. Participants are assumed to focus on the task at hand rather than on the form of their speech. Moreover, this method allows for the study of speech in context.

However, I found that an elicitation paradigm was lacking that gives both good control over the elicited data and is suitable for studying speech in context (see also Marandin (2011)). I therefore combined elements of both these methods to set up Scripted Simulated Dialogue. The paradigm uses scripting, but also simulates (to some extent) a conversation. This makes it suitable for research topics (like the one in Chapter 4) that require both control over the elicited data and the presence of a discourse context. In addition, it allows for control or manipulation of the preceding discourse, in contrast to a Referential communication task, which provides uncontrolled discourse that may be analysed afterwards.

5   The cross-linguistic picture

Finally, I discuss what the results of the research reported here imply for the cross-linguistic picture.

The dissertation raises many questions regarding the extent to which choice function *wh*-in-situ is available in *wh*-fronting languages. In Chapter 6, I argued that the choice function account proposed for French is also a promising direction of research for contextually restricted *wh*-in-situ in English and German. Apart from in English and German, contextually restricted *wh*-in-situ is attested in several other *wh*-fronting languages, at least in Spanish (Biezma 2018; Jiménez 1997), Modern Greek (Roussou et al. 2014) and (Brazilian) Portuguese (Pires & Taylor 2009). This raises the question how many *wh*-fronting languages allow for non-echoic *wh*-in-situ. A second question is to what extent contextually restricted *wh*-in-situ in different languages exhibits the same properties. They seem to be infelicitous as indirect questions (cf. Bobaljik & Wurmbrand 2015), but it is not clear why this is so. Furthermore, not all *wh*-fronting languages seem to allow for non-echoic *wh*-in-situ. For instance, Dutch certainly does not have *wh*-in-situ to the same extent as English and German. Yet, many, if not all *wh*-fronting languages have echo questions. If echo questions are interpreted via a choice function as I suggested, it means that a choice function is part of the repertoire of these languages. Then why do not all *wh*-fronting languages allow for non-echoic *wh*-in-situ like English and German?

The dissertation mentioned several diagnostics that can be used to investigate the presence of choice function *wh*-in-situ in a language. Choice function *wh*-in-situ questions only occur in contexts that make them Maximally Given. They exhibit a non-standard interpretation consistent with a denotation as a singleton-set of propositions, i.e. a set with only one proposition, which I related to the absence of *wh*-movement. This meaning can be brought out by a paraphrase using a definite description that corresponds to a contextually given referent, consistent with the type of context in which this kind of question can be used (see Chapters 5 and 6 for examples). As a result of this, a negative

reply like *nothing* or *nobody* is perceived as odd. In addition, choice function *wh*-in-situ questions are infelicitous as indirect questions and do not display intervention effects. (At least in French, they are more acceptable than other *wh*-questions with a determiner preceding the *wh*-phrase, like [...] *des quoi* '[...] DES what', but as these questions are still not very good, this is less suitable as a diagnostic.) Finally, in languages that consistently mark givenness prosodically, they are expected to display givenness marking of the whole utterance except the *wh*-word, including the restriction of the *wh*-phrase.

In Chapter 1, I observed that French *wh*-in-situ questions take an interesting place in the cross-linguistic spectrum. French is relatively unusual in that it has both the *wh*-fronting and the *wh*-in-situ option. In addition, as mentioned above, French *wh*-in-situ is infelicitous in indirect questions, unlike in true *wh*-in-situ languages like Mandarin Chinese. The infelicity in indirect questions and the availability of both *wh*-in-situ and *wh*-fronting are the two properties that clearly distinguish French *wh*-in-situ from questions in true *wh*-in-situ languages.

I speculated in Chapter 6 that French may be undergoing a language change with respect to *wh*-in-situ. I hypothesised that an earlier variety of the language only involved choice function *wh*-in-situ, cf. Type A speakers. This variety would have been a *wh*-fronting language with contextually licensed *wh*-in-situ, i.e. more similar to languages like English and German. Re-analysis of choice function *wh*-in-situ, for instance in contexts that made the relevant meaning 'semi-salient', may have led to the use of covert movement (which was already available for multiple *wh*-questions) to interpret *wh*-in-situ. This would have led to Type B speakers, like the population of age 20 to 35 who accepted *wh*-in-situ in out of the blue contexts.

The infelicity of *wh*-in-situ in indirect questions, in which French differs from true *wh*-in-situ languages like Mandarin Chinese, is a matter for future research. I hypothesised in Chapter 6 that the contrast between these languages may be related to the fact that unlike in French, the *wh*-words in languages like Mandarin Chinese are *wh*-indefinites (Cheng 1991). They do not have inherent quantificational force, but rather behave like variables, which can have interrogative as well as non-interrogative

interpretations. These true *wh*-in-situ languages have a *wh*-operator/marker base-generated in the left periphery, including in the case of an indirect question (Cheng 1991; Tsai 1994a). In contrast, *wh*-in-situ in French behaves like *wh*-fronting in that it involves *wh*-words with inherent interrogative force. Future research might investigate why covert movement of *wh*-phrases, or the presence of a choice function, cannot satisfy the selection restrictions imposed by indirect questions in French.

Leaving matters not discussed in this dissertation aside, the research reported here leads to the following cross-linguistic picture. There are true *wh*-in-situ languages, for which *wh*-in-situ is the default strategy, also in indirect questions. There are echo questions, which may be available in all *wh*-fronting languages. I suggested that these are interpreted via a contextually supplied choice function, while still displaying a structure that is in other respects unique to echo questions, including an echo question operator. A subset of the *wh*-fronting languages allows for a contextually restricted variety of *wh*-in-situ that is non-echoic. Pending further research, this *wh*-in-situ may be interpreted via a contextually supplied choice function in combination with a regular question operator. Finally, French has covert movement *wh*-in-situ in addition to choice function *wh*-in-situ.

Are there more languages like French, i.e. *wh*-fronting languages with both a choice function and a second mechanism to interpret *wh*-in-situ? A candidate might be Brazilian Portuguese. Pires & Taylor (2009: 8) observe in two footnotes that "there seem to be two distinct sets of in-situ cases" in this language (fn 6) and that "certain speakers allow *wh*-in-situ more freely" (fn 7) than the contextually restricted *wh*-in-situ they discuss in the paper. This is a topic I leave for future research.

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Appendix A (Chapter 4)

Materials of the production experiment

In the production experiment reported in Chapter 4, French *wh*-in-situ questions were elicited in three conditions:

    A. Echo question (expressing auditory failure)
    B. Information seeking question with broad focus
    C. Information seeking question with narrow focus

This appendix presents the experimental materials used in the study, which took the form of Scripted Simulated Dialogues. Below, I mark the dialogues used in each condition as *E* for 'echo question' (Condition A), *B* for broad focus question (Condition B) and *N* for narrow focus question (Condition C). There are 12 items, which were each used in all three conditions, resulting in for instance item *E1*, item *B1* and item *N1*. The participant is represented as speaker A and the target sentence is marked by slanted text. Struck through text represents a part of an utterance that was rendered inaudible by pink noise. Each dialogue is followed by a question about the information supplied by the recorded 'interlocutor' (speaker B), the correct answer to which is marked in bold.

E1

[Conversational setting] Tu es au bureau. Véronique, une de vos jeunes collègues nouvellement engagée au département crédit est devant l'imprimante. Elle a l'air passablement énervée. Tu dis :

A Il y a un problème ?
B Oui, j'ai rendez-vous dans 15 minutes avec le patron, j'ai lancé une
    impression et l'imprimante ne fonctionne pas.
A De nouveau ! Et tu as besoin de ce document pour la réunion ?
B Oui, c'est le dossier sur lequel on doit travailler. J'ai préparé le contrat
    d'~~hypothèque~~ pour Boulinco.
A *Tu as préparé quel contrat pour Boulinco* ?

B Le contrat d'hypothèque pour l'achat de leur nouvel entrepôt.

Véronique a rendez-vous avec son patron...

1. dans 15 minutes 2. dans une heure 3. dans 3 minutes

B₁

[Conversational setting] Tu es directeur d'agence bancaire. Tu as une réunion pour faire l'évaluation de Marie, qui achève un stage de 6 mois dans ton agence.   Cette dernière arrive, mais tu attends Jean, son responsable direct. Tu accueilles Marie en disant :

A Alors Marie, c'est déjà la fin de ton stage dans 2 semaines ?

B Oui déjà ! Ces 6 mois ont filé ; j'ai l'impression d'avoir commencé hier.

A Jean vient de m'appeler, il aura 5 minutes de retard.

B Vous voulez que je repasse dans 5 minu~~tes~~ ?

A Non, en attendant, j'avais une petite question boulot.
   Tu as préparé quel contrat pour Boulinco ?

B Une hypothèque avec amortissements mensuels pour une durée
   de 15 ans.

Marie a travaillé à la préparation d'un contrat...

1. de crédit à l'export 2. de leasing de voiture **3. d'hypothèque**

N₁

[Conversational setting] Tu travailles depuis peu dans une banque. C'est la pause et tu sirotes votre café avec Isabelle, une collègue fraîchement embauchée comme toi. Tu lui demandes :

A Comment s'est passée cette première semaine ?

B De mon côté, super. Pas mal de boulot mais je trouve que l'ambiance
   du service est sympa. Et toi ?

A C'est un peu pareil. Et Pierre, tu sais s'il est content ?

B Oui je crois ; il a bossé toute la semaine avec moi sur le dossier
   Boulinco ; On a préparé les différents contrats de crédit pour la réunion
   avec le client la semaine prochaine. Pierre a préparé le contrat
   hypothécaire.

A OK. Et toi, *tu as préparé quel contrat pour Boulinco ?*
B Moi, j'ai travaillé sur leur crédit à l'exportation.

Les jeunes qui discutent travaillent dans la banque...
1. depuis une semaine 2. depuis trois semaines 3. depuis un mois

E2
[Conversational setting] Tu rentres chez toi le soir après une semaine de déplacement. Arrive Julie, ton épouse, auteur de romans policiers. Tu lui dis:

A Hello, ça a été cette semaine ?
B Oui, très bien. J'étais à Lille aujourd'hui.
A Ah bon, et pour quoi faire ?
B J'avais été invitée par un prof de français pour expliquer aux enfants comment on construit un roman policier. J'ai présenté mon ~~dernier~~ bouquin devant la classe.
A *Tu as présenté quel bouquin devant la classe ?*
B Mon dernier, « *Le Chalumeau du peintre* ».

Julie a présenté son dernier livre dont le titre est...
1. le Journal d'un piètre assassin 2. la Bicyclette noire
3. le Chalumeau du peintre

B2
[Conversational setting] Tu es un élève de 1ère ES. Tu as eu la grippe et as raté quelques jours de classe. Tu retournes à l'école ce matin et tu rencontres Lucie, une amie de classe, dans le bus. Tu lui dis :

A Salut Lucie.
B ~~Ah, s~~alut Dominique ! Contente de te revoir ! Tu as été malade ?
A Oui, une bonne grippe. Quoi de neuf à l'école ?
B Tu as raté le DS de math. Pas trop dur pour une fois. J'imagine que tu vas pouvoir le rattraper prochainement.
A J'espère bien. Et en français, il faudra aussi que je rattrape.

Tu as présenté quel bouquin devant la classe ?
B *L'Etranger* de Camus. Ça s'est bien passé.

Tu as été malade, tu as eu...
1. une angine **2. une grippe** 3. la varicelle

N2
[Conversational setting] Tu es maîtresse en classe de CM1 et tu as été absente deux mois pour raison de santé. Tu es en réunion avec ta remplaçante pour faire le point avec elle ; tu en es au programme de lecture. Tu demandes :

A Bon et en français, tu as réussi à les faire lire ?
B ~~Oui~~, avec Lydia, la bibliothécaire, on a travaillé sur deux livres
     qu'on leur a présentés de façon ludique.
A Sympa, lesquels ?
B D'abord, Lydia a présenté le bouquin « L'Enfant océan »
     devant la classe.
A Et toi, *tu as présenté quel bouquin devant la classe ?*
B *« Le Chat assassin »*, ils ont bien aimé.

Le premier livre présenté devant la classe a été présenté par...
1. la bibliothécaire 2. la directrice de l'école 3. la maîtresse remplaçante

E3
[Conversational setting] Tu viens de passer le week-end à Bruxelles. Tu montes dans le Thalys Amsterdam-Paris pour rentrer à Nantes et tu tombes sur Jeanne, une de tes amies, qui est déjà assise. Tu dis :

A Jeanne, ça alors, quelle surprise. Qu'est-ce que tu fais là ?
B J'ai été passé un gros week-end aux Pays-Bas; deux jours à Amsterdam
     et un jour à La Haye. C'est très beau.
A Moi j'étais à Bruxelles pour une expo Matisse-Dali. Tu as fait
     l'exposition Monet à La Haye ? Il paraît que c'est très beau.
B Oui, je l'ai fait. C'est vrai que c'est beau. Mais j'ai préféré le musée

~~Van Gogh~~ d'Amsterdam.
A *Tu as préféré quel musée d'Amsterdam* ?
B Le van Gogh.

Jeanne revient d'un week-end passé…
1. En Italie **2. Aux Pays-Bas** 3. Au Luxembourg

B3
[Conversational setting] Tu es à un dîner avec des amis. Tu discutes avec Jacqueline, une amie avec qui vous partages souvent les bons plans. Tu dis :

A J'ai lu un super livre récemment. Un thriller à couper le souffle.
B Ah oui, lequel ?
A « Je suis Pilgrim » de Terry Hayes. Et toi, tu as lu quelque chose de bon ?
B Non, pas grand-chose, quelques policiers, m~~ais~~ rien de spectaculaire.
A Et dis donc, tout-à-fait autre chose ; *tu as préféré quel musée d'Amsterdam* ? J'y vais cette semaine pour 24 heures.
B Le Van Gogh, sans hésitation. A faire absolument.

Jacqueline a lu récemment…
1. des romans policiers 2. des romans historiques 3. des biographies

N3
[Conversational setting] Tu es à la cantine du bureau et tu déjeunes avec Perrine, une collègue. Tu dis :

A Il paraît que tu étais aux Pays-Bas ce week-end.
B ~~Oui~~, 3 jours à Amsterdam, c'était super.
A Nicolas y est allé aussi au printemps dernier.
B Oui, on en avait discuté avant que je ne parte. Il m'a donné pleins de tuyaux et de conseils. J'y allais surtout pour les musées. Nicolas dit qu'il a préféré le musée l'Hermitage d'Amsterdam. Pas moi.
A Ah non ? Toi, *tu as préféré quel musée d'Amsterdam* ?
B Le Rijksmuseum.

Lors de sa visite aux Pays-Bas, Perrine a préféré comme musée...
1. le Van Gogh 2. le Mauritshuis **3. le Rijksmuseum**

E4
[Conversational setting] Tu rentres chez toi le soir. Marie-Emmanuelle, ta
femme t'a fait une surprise. Elle est rentrée plus tôt du travail et a préparé
un petit festin pour ton premier anniversaire de mariage. Tu dis :

A Sympa la surprise !
B On passe à table quand tu veux.
A Waouh des huîtres et du champagne, rien que ça !
B Je ne te cache pas que je me suis donnée à fond. J'ai même préparé le
    gâteau ~~de Bonne-Mamie~~ pour le dessert.
A *Tu as préparé quel gâteau pour le dessert ?*
B Le gâteau de Bonne-Mamie aux fraises et à la rhubarbe.

Marie-Emmanuelle a préparé un repas de fête pour fêter...
1. l'anniversaire de son mari **2. un anniversaire d'un an de mariage**
3. une promotion

B4
[Conversational setting] Tu as décidé avec quelques amis d'organiser une
fête pour l'anniversaire de Marc. Tu discutes des préparatifs avec
Béatrice, sa copine, dingue de cuisine. Tu dis :

A Tu sais combien nous serons finalement ?
B Une bonne vingtaine.
A Top. J'ai branché la sono et la playlist est prête. Je fais un test et puis
    je rentre chez moi me changer.
B Ok. Moi je vais prévenir les voisins qu'on va faire du bruit ce soir.
A Ça marche. Dis-moi juste en exclusivité. *Tu as préparé quel gâteau*
    pour le dessert ?
B Un Merveilleux. ~~Et~~ je peux te dire, il porte bien son nom !

Pour la fête, Béatrice a décidé de préparer…
1. un Far breton 2. un Misérable **3. un Merveilleux**

N4
[Conversational setting]   Tu es invité à une fête. Il a été demandé à chacun de préparer et d'apporter quelque chose. Tu discutes avec une amie qui est invitée aussi. Tu lui demandes :

A Tu vas à la fête de ce soir?
B Oui évidemment, ça ne se rate pas. Toi aussi ? Tu sais qui d'autre y va ?
A Oui, moi j'y vais. Michaël m'a dit qu'il y allait aussi.
B Je sais. Il m'a dit qu'il devait faire un dessert, comme moi. Il a préparé un gâteau au chocolat pour le dessert.
A Hmmm, j'adore. Et toi, *tu as préparé quel gâteau pour le dessert* ?
B J'ai fait un gâteau aux bananes et pépites de choco~~lat~~.

Michaël a préparé pour la fête…
1. un financier **2. un gâteau au chocolat** 3. des meringues

E5
[Conversational setting]   Tu es maître d'école. Tu veux photocopier un document. Tu attends à la machine car ta collègue Anne est occupée. Tu dis :

A Salut. Prends ton temps.
B Hello. Merci, j'ai presque fini. C'est sympa que la période des sorties scolaires arrive de nouveau.
A Oui, ça change un peu de la routine. Tu sais déjà ce que tu vas faire ?
B J'ai proposé la sortie au ~~conservatoire~~ pour le cours d'art.
A *Tu as proposé quelle sortie pour le cours d'art*?
B Celle au conservatoire. Je l'avais faite l'année dernière aussi. Tout le monde avait bien apprécié.

Dans le cadre du cours d'art, Anne a proposé...
1. une sortie au musée moderne 2. une sortie au musée d'arts japonais
3.une sortie au conservatoire

B5
[Conversational setting] Tu es directeur d'école. Dans la salle des profs, tu
croix Flore, une maîtresse de CM2. Tu dis :

A Comment vas-tu, Flore ?
B Bien, mer~~ci~~. Ma classe est vraiment sympa cette année.
A Tant mieux. Combien d'élèves as-tu ?
B 24, un bon nombre.
A Tiens, tant que je te vois, j'avais une question à te poser.
    Tu as proposé quelle sortie pour le cours d'art ?
B Je voulais les emmener visiter l'atelier d'une amie peintre.
    Elle est prête à venir nous aider en classe pour notre projet de BD.

Flore a dans sa classe...
1. 24 élèves 2. 30 élèves 3. 28 élèves

N5
[Conversational setting] Tu es professeur dans un collège. Pendant la
pause, tu croix dans le couloir Francine, une collègue qui est prof
principal des 5èmes. Tu dis :

A Bonjour Aurélie, tu donnes cours toute l'après-midi ?
B Non, juste deux heures. Mais après je dois travailler sur le dossier
    pour la sortie que je veux faire avec mes 5èmes.
A C'est vrai que ça prend beaucoup de temps, ça.
B C'est sûr ; j'ai parlé hier à Pierre, le prof principal des 4èmes.
    Il a proposé une sortie au musée de la mode à ses élèves. Ils n'étaient
    pas très enthousiastes. Il hésitait à changer.
A Et toi, *tu as proposé quelle sortie pour le cours d'art* ?
B Je voudrais les emmener à Paris pour deux jours,

ma~~is~~ je ne leur en ai pas encore parlé.
Cet après-midi Francine a décidé de travailler...
1. sur les bulletins **2. sur le dossier de sortie scolaire**
3. sur la réunion parents-prof

E6
[Conversational setting] Tu fais partie du comité de gestion d'un grand club de sport. Au bar, tu discutes avec Bianca qui est également dans le comité. Tu dis :

A Bien nagé ?
B Oui, ça faisait du bien. Je n'ai plus de problème de genou.
   Tu croises Jean encore aujourd'hui ?
A Je ne crois pas, non. Pourquoi ?
B Je pars maintenant et je voulais lui faire savoir que j'ai déposé
   le devis ~~du jardinier~~ dans son bureau.
A *Tu as déposé quel devis dans son bureau* ?
B Celle du jardinier.

Bianca a bien nagé et n'a plus de problème...
1. à l'épaule **2. au genou** 3. au dos

B6
[Conversational setting] Tu travailles en entreprise. A la machine à café, tu rencontres Barbara, l'assistante de ton patron, Henry. Tu dis :

A Tout va bien Barbara ?
B ~~Oui.~~ Pas mal de boulot en ce moment. Henry comprend heureusement
   que j'ai parfois un peu de retard.
A Avec cette campagne de lancement de produit, nous sommes tous bien
   occupés. Ça ira mieux d'ici quelques semaines.
B Sûrement. Faut que je file, Henry m'attend.
A Justement, je voulais te demander ;
   tu as déposé quel devis dans son bureau?
B La devis de l'agence d'EspacePub. Je n'en ai pas encore reçu d'autres.

Anne est pressée parce qu'…
1. elle a une réunion avec Henry 2. elle doit passer des coups de téléphone importants 3. elle a un rendez-vous de médecin

N6
[Conversational setting] Tu travailles dans un cabinet médical comme assistante de gestion. Le cabinet a décidé de lancer des travaux d'agrandissement et tu as reçu plusieurs devis d'entrepreneurs. En fin de journée tu as réunion avec le médecin-chef et Louis le comptable. Tu as décidé d'analyser un devis chaque soir de la semaine car tu dois prendre une décision en début de semaine prochaine. Tu croix Anne, la secrétaire du cabinet, et tu dis :

A Dis-moi Anne, tu n'as pas oublié que nous avons notre réunion de travail sur les devis ce soir ?
B Non, ~~non~~, je n'ai pas oublié.
A Tu as déjà préparé un devis ?
B Oui et je l'ai déposé il y a une heure dans le bureau du patron.
  Mais je viens de croiser Louis, le comptable, qui pensait que c'était à lui de le faire. Il m'a dit qu'il a déposé le devis Oliviro dans son bureau.
A Ah, et toi, *tu as déposé quel devis dans son bureau* ?
B Celui de Maurillon. Donc, s'il y en a 2, tu ne t'étonnes pas.
  Celui de demain sera déjà prêt comme ça.

Anne a déposé dans le bureau du médecin-chef le devis…
1. d'Oliviro 2. de Louis **3. de Maurillon**

E7
[Conversational setting] Tu travailles dans une imprimerie et tu es en charge de la réalisation de la couverture d'un livret. Tu discutes avec Clémence, la cliente, qui est également une de vos amies. Tu dis :

A Bonjour Clémence.
B Bonjour. Je viens te voir car j'ai fait mon choix pour la mise en page des photos et du titre de couverture de mon livret.

A Très bien. On va voir ça. Tu les as sur clé USB ?

B Oui. Le nom du fichier est « couverture ». Je voudrais mettre le titre
en haut. Et j'ai adopté le format ~~'vignette'~~ pour les photos.

A *Tu as adopté quel format pour les photos ?*

B Le format 'vignette', je pense que cela rendra bien.

Clémence a commandé…
1. des livrets 2. des tracts 3. des affiches

B7
[Conversational setting]   Tu travailles dans le service publicité d'une petite entreprise. Tu as une réunion avec Natacha, responsable informatique. Tu prépares avec elle des dépliants. Tu dis :

A Hello Natacha, tu veux une petite tasse de café ?

B Volontiers, ~~il~~ ne fait pas chaud.

A C'est le moins que l'on puisse dire. Tu as pu travailler
sur mes dépliants ?

B Oui, la maquette est prête, je vais te la montrer.

A Génial. *Tu as adopté quel format pour les photos ?*

B J'ai finalement pris le format A6 ; on en mettra moins,
mais on verra mieux les détails.

Natacha est…
1. responsable informatique 2. une cliente 3. secrétaire

N7
[Conversational setting] Marie-Anne ta femme finalise la commande en ligne de photos pour ta carte de vœux. Tu la rejoignes derrière l'ordinateur. Tu lui dis :

A Ça avance ?

B Oui j'y suis presque. J'ai sélectionné les photos et je termine
la mise en page.

A J'ai vu les vœux des Tavernier en bas. Ils ont adopté un format carré
  pour les photos. Je trouve ça assez sympa.
B Oui, c'est vrai que ça rend pas mal.
A Et toi *tu as adopté quel format pour les photos* ?
B Pour l'inst~~ant~~, ce sont des rectangles mais on peut encore changer
  si tu veux.

Marie-Anne travaille...
1. sur un album photos **2. sur votre carte de vœux**
3. sur sa déclaration d'impôts

E8
[Conversational setting] Tu as prêté ton ordinateur portable à Camille, ta
sœur, pour ses examens. Elle rentre à la maison après ses semaines
d'examens et avant de partir à la montagne avec des copains. Tu dis :

A Alors, en vacances ?
B Oui, cette petite semaine au ski sera bien méritée.
A Tu as pensé à rapporter les affaires que je t'avais prêtées ?
B Oui. D'ailleurs, tu verras, j'ai installé des programmes ~~de statistiques~~
  sur ton portable.
A *Tu as installé quels programmes sur mon portable* ?
B 2 logiciels dont j'ai besoin pour le cours de stat. Si tu pouvais ne pas les
  enlever, j'en ai encore besoin.

Camille a installé sur l'ordinateur de sa sœur...
1. des logiciels de comptabilité 2. des logiciels de dessin industriel
3. des logiciels de statistiques

B8
[Conversational setting]   Depuis quelques semaines, tu es agent
commercial pour une société pharmaceutique et tu pars faire ta première
tournée commerciale. Dans le parking, tu croix Stéphanie du département
informatique qui s'est occupée de ton équipement informatique et
téléphonique. Tu lui dis :

A Tu as fini ta journée ?

B Oui, il faut que je rentre plus tôt aujourd'h~~ui~~. J'ai un rendez-vous
   médical. Et toi, ça y est c'est le départ ?

A Oui et j'en suis bien content.

B Tu es parti pour combien de jours ?

A Je rentre vendredi. Tiens je voulais te demander. *Tu as installé quels*
   programmes sur mon portable ?

B Pour l'instant Microsoft Office et le gestionnaire de commandes.
   Mais si tu as besoin de plus, on complètera à ton retour.

Stéphanie doit partir parce qu'elle a un rendez-vous...
1. commercial 2. avec le professeur d'un de ses enfants **3. médical**

N8
[Conversational setting]   Tu viens d'acheter un nouvel ordinateur
portable. Le précédent n'avait pas survécu à une chute dans l'escalier. Ta
sœur Pauline, à l'origine de la chute, est chargée d'installer les logiciels sur
ton nouveau portable. Tu discutes avec ta mère. Tu dis :

A Tu sais où en est mon ordi ?

B Il est prêt. Je viens de finir l'installation.

A Toi ? Je pensais que c'était Pauline qui devait le faire.

B Pauline a installé Microso~~ft~~ Office.

A Et toi, *tu as installé quels programmes sur mon portable ?*

B Moi, j'ai installé un anti-virus et je t'ai remis Photoshop.

Pauline a installé sur l'ordinateur de sa mère :
1. Microsoft Office 2. Photoshop 3. un anti-virus

E9
[Conversational setting] Tu es étudiant et tu fais un petit job pour une
entreprise de sondage. Tu rentres d'une longue journée ou tu es allé dans
différentes entreprises pour effectuer un sondage sur un service
informatique. Tu croix Eloïse qui fait le même boulot que toi. Tu dis :

A Hello Eloïse. Ça s'est bien passé de ton côté ?

B Non, pas terrible. C'était une journée un peu pourrie. Les personnes que je sondais n'étaient pas très réactives. Et toi ça a été ?

A Oui, moi ça a été. Je suis tombé sur des personnes assez efficaces aujourd'hui, j'ai bien avancé.

B Tant mieux. En plus, j'ai oublié mon classeur de ~~math~~ en clientèle.

A *Tu as oublié quel classeur en clientèle* ?

B Celui de math, si je ne le retrouve pas, je ne sais pas comment je fais pour mes examens.

Les personnes interrogées par Eloïse aujourd'hui n'étaient pas...
1. très créatives **2. très réactives** 3. très aimables

B9

[Conversational setting] Tu travailles comme secrétaire dans une agence immobilière. Louise, jeune commerciale, rentre d'une série de visites chez des particuliers qui désirent vendre un bien. Elle passe dans ton bureau. Tu lui dis :

A Ça s'est bien passé ?

B Oui, deux trois affaires intéressantes je pense. Il y a eu des coups de télé~~phone~~ pour moi ?

A Oui, quelques-uns, rien de spécial. Je t'ai mis un mot sur ton bureau.

B Merci je vais aller regarder ça.

A Pierre m'a parlé de ton petit souci. *Tu as oublié quel classeur en clientèle* ? Je vais envoyer maintenant un message aux clients que tu as visités aujourd'hui si tu veux pour le retrouver.

B C'est gentil. C'est le classeur « grands comptes ». Il est rouge.

Louise a oublié en clientèle...
1. le classeur de factures 2. le classeur de devis
3.le classeur « grands comptes »

N9
[Conversational setting] Tu es architecte d'intérieur et tu travailles dans un grand bureau. Dans le couloir, tu croix Inès qui est représentante en tissus d'ameublement de grandes marques françaises. Elle a son manteau et son sac et paraît énervée. Tu dis :

A Bonjour, tu reviens de chez des clients là ?
B ~~Oui~~, je reviens de chez Guibert Déco. Ils ont choisi un tissu Frey pour leurs rideaux finalement.
A Ok. Tu me mettras la référence sur mon bureau ?
B Oui, mais j'ai un problème, il faut que je retrouve mon classeur. Je crois que je l'ai oublié chez un client.
A Ah ben dis donc. Ce n'est pas notre journée. Je viens de croiser Rebecca qui a oublié son classeur Sonia Rykiel. Et toi, *tu as oublié quel classeur en clientèle* ?
B Ben justement celui de Frey.

Pour ses rideaux, Guibert Déco a choisi un tissu de la marque...
1. Designers Guild **2. Frey** 3. Ka international

E10
[Conversational setting] Tu travailles dans un cabinet de kinésithérapie. Ta pause déjeuner est bientôt finie. Ta collègue Agnès est manifestement sortie. Elle rentre en effet avec son manteau et des joues bien rouges. Tu dis :

A Tu es sortie par ce temps glacial ?
B Oui, j'avais rendez-vous Laura, tu te rappelles d'elle ? Elle m'avait demandé il y a quelques semaines de l'aider à choisir un cours d'aquagym. Alors nous sommes allées prendre un cours ensemble pour voir à quoi cela ressemblait.
A Par ce froid, vous êtes courageuses. Vous êtes allées où ?
B Sur conseil de Paul, j'ai essayé la piscine des ~~Charmettes~~ avec Laura.
A *Tu as essayé quelle piscine avec Laura ?*

B La piscine des Charmettes. Ils ont des cours de tous les niveaux. Celui qu'on a suivi était pour débutants et franchement c'était déjà assez intensif.

Agnès a essayé des cours d'aquagym…
1. avec son mari 2. avec sa fille **3. avec son amie Laura**

B10
[Conversational setting]   Tu rencontres Isabelle par hasard au supermarché. Tu sais qu'elle accueillait le weekend dernier Laura, une de ses amies et grande nageuse. Tu lui dis :

A Hello. En train de faire tes courses toi aussi ?
B Faut bien manger quelque chose, ~~hein~~. Je n'ai pas beaucoup d'inspiration d'ailleurs. Qu'est-ce que tu manges toi ce soir?
A Une salade épinards fêta olives.
B Voilà qui pourrait me donner des idées. J'ai cuisiné tout le week-end pour mon amie, j'ai envie de quelque chose de léger.
A Oui, d'ailleurs tu ne m'as pas dit. *Tu as essayé quelle piscine avec Laura* ?
B Nous sommes allées à la piscine de Walibi. Ce n'est pas la meilleure piscine pour s'entraîner, mais il y a un sauna, j'adore.

Isabelle a envie de manger quelque chose de léger…
1. parce qu'elle a cuisiné tout le week-end pour une amie
2. parce qu'elle fait régime 3. parce qu'elle a des problèmes d'estomac

N10
[Conversational setting] Tu rencontres ta voisine, Anna, dans la rue. Elle et Denis, son mari, ont une petite fille Laura qui a l'âge de votre fille. Tu lui dis :

A Salut Anna, vous avez fait quelque chose de spécial le week-end dernier ?
B Oui, je suis allée à la piscine avec Laura. Elle nous a demandé il y a un moment déjà de suivre des cours.

A Ah oui, sympa. Vous avez trouvé ?

B Il y a deux semaines Denis avait essayé la piscine de Saint Germain
   avec elle. Mais ils n'étaient pas enthousiastes. Alors c'était mon tour le
   week-end dernier.

A Et toi, *tu as essayé quelle piscine avec Laura* ?

B Le Neptun~~e~~, et c'était très bien. Du coup nous l'avons inscrite.

Laura va suivre des cours de natation à la piscine…
1. le Poséidon **2. le Neptune** 3. l'Atlantide

E11

[Conversational setting] Tu es directeur d'une petite école primaire. La
semaine prochaine, c'est la rentrée des élèves. Mais, demain, mercredi,
c'est la pré-rentrée pour les maîtres et maîtresses. Tu es à l'école avec
Axelle, ta secrétaire, pour organiser les dernières petites choses. Tu dis :

A Et c'est reparti pour un an !

B Oui et avec deux classes et deux nouvelles maîtresses de plus.

A C'est bien qu'on ait prévu ce petit dîner pour faire
   plus ample connaissance.

B Oui, d'ailleurs je voulais te dire, pour qu'on soit au calme pour parler,
   j'ai réservé le resto « chez ~~Monette~~ » pour jeudi soir.

A *Tu as réservé quel resto pour jeudi soir* ?

B Chez Monette, dans la petite salle du fond, on devrait être tranquilles.

Axelle a choisi le restaurant Chez Monette…
1. parce que c'est bon **2. pour être tranquille** 3. en raison du prix

B11

[Conversational setting] Tu discutes avec Ernestine, ta femme. Elle part
quelques jours en voyage d'affaires et rentrera mercredi, juste à temps
pour ton anniversaire. Tu lui dis :

A Bon voyage ma chérie. Tu as bien ton passeport ?

B Oui merci. Ah voilà mon taxi.

A Tu m'envoies un texto quand tu es arrivée à Londres ?
B Oui, oui bien sûr. A mercredi ; pour ta dernière soirée de trentenaire !
A Moque-toi ; dans six mois c'est ton tour. D'ailleurs tu ne m'as pas dit.
   Tu as réservé quel resto pour jeudi soir ?
B Surpri~~se~~...

Ernestine rentre de voyage...
1. mercredi 2. samedi 3. vendredi

N11
[Conversational setting] Tu es violoniste dans un orchestre amateur. Tu
es en séance de répétition. Pendant que les flûtistes répètent un passage
délicat, tu parles avec ta voisine Eléonore. Tu lui dis :

A Tu pars en déplacement cette semaine ?
B Non pour une fois, je suis là toute la semai~~ne~~. Ça tombe bien, c'est la
   remise de diplôme de ma fille jeudi. Du coup, nous allons en famille au
   restaurant.
A C'est marrant, Fleur m'a raconté la même chose.
B Oui, elle m'a dit qu'elle a réservé au Pavillon pour jeudi soir.
A Et toi, *tu as réservé quel resto pour jeudi soir ?*
B Le Bord du Lac.

Jeudi soir Eléonore fête...
1. l'anniversaire de sa fille 2. la fin des examens de sa fille
3. le diplôme de sa fille

E12

[Conversational setting]   Tu travailles dans le département financier d'une entreprise de distribution. Demain tu pars en vacances de Noël et tu discutes avec Suzanne ton assistante. Tu dis :

A Je voudrais qu'on passe en revue ce qui restait à faire
   avant mes vacances.
B OK. Je prends le compte-rendu de notre réunion de lundi dernier.
A Voyons. Vérification des factures de décembre.
B C'est fait. J'ai aussi préparé le courrier de ~~vœux~~ pour nos banquiers.
A *Tu as préparé quel courrier pour nos banquiers*?
B La lettre de vœux.

Un courrier de vœux a été préparé pour...
1. les fournisseurs 2. les acheteurs **3. les banquiers**

B12

[Conversational setting]   Tu es propriétaire d'un magasin de skis. Tu fais le point avec ton comptable Frédérique. Tu lui dis :

A Alors, ça donne quoi ce début de saison calamiteux ? On est début
   janvier et on n'a pas encore vu un flocon de neige.
B Calamiteux, c'est le terme.
A Il semblerait qu'ils annoncent de la neige pour la fin de la semaine.
   Espérons que pour une fois, ils ne se trompent pas.
B O~~ui~~, j'ai vu ça aussi. Si la saison ne démarre pas rapidement, nous
   serons bientôt dans l'incapacité de payer toutes les factures.
A Il va falloir demander un délai. Finalement, *tu as préparé quel courrier*
   pour nos banquiers ?
B J'ai envoyé un courrier de demande d'échelonnement des paiements
   sur 3 mois.

Frédérique a envoyé aux banques...
1. une demande de prêt **2. une demande d'échelonnement**
des paiements 3. une demande de rendez-vous

N12

[Conversational setting]   Tu travailles dans un hôpital dans le service administratif qui gère les commandes de bureau. Certains services de votre hôpital viennent de déménager. Tu discutes avec Bettina, une de tes collègues. Tu dis :

A Ce déménagement, ça nous fait pas mal de boulot en plus.
B C'est sûr. Mais bon, si c'est pour un mieux.
A Tu travailles sur quoi pour l'instant ?
B J'ai fait un brouillon de courrier pour les banques...
A Marc aussi faisait un courrier pour nos banquiers ce matin, pour les avertir de notre changement d'adresse. Et toi, *tu as préparé quel courrier pour nos banquiers* ?
B Moi c'était plus sympa, c'était les vœux.

Bettina travaille sur...
1. un brouillon de courrier pour les banques
2. un nouvel emploi du temps 3.   un   courrier   pour   les   clients

Appendix B (Chapter 4)

Statistical appendix

The tables below report the statistics regarding the comparisons between F0, duration and intensity, as described in Chapter 4.

F0

Table B1. Results of linear mixed effects models for F0 measurements
with the Broad focus Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	SE	p
'auxiliary low'	Echo Tune	-0.91	0.26	< 0.001
	Narrow focus Tune	-0.49	0.27	0.077
'participle high'	Echo Tune	-1.89	0.19	< 0.001
	Narrow focus Tune	-2.15	0.21	< 0.001
'*wh*-word high'	Echo Tune	-0.13	0.23	0.58
	Narrow focus Tune	-3.40	0.25	< 0.001
'final *wh*-phrase high'	Echo Tune	4.34	0.24	< 0.001
	Narrow focus Tune	0.14	0.26	0.60
'antepenultimate low'	Echo Tune	4.32	0.29	< 0.001
	Narrow focus Tune	0.65	0.31	< 0.05
'penultimate low'	Echo Tune	4.33	0.36	< 0.001
	Narrow focus Tune	0.40	0.38	0.29
'ultimate high'	Echo Tune	6.13	0.37	< 0.001
	Narrow focus Tune	2.02	0.39	< 0.001
'pitch range'	Echo Tune	5.32	0.37	< 0.001
	Narrow focus Tune	0.46	0.39	0.24

'tone copying'	Echo Tune	-1.95	0.46	< 0.001
	Narrow focus Tune	2.40	0.48	< 0.001
'sentence-final pitch movement'	Echo Tune	1.64	0.54	< 0.01
	Narrow focus Tune	1.96	0.56	< 0.001

Note: The reference category is the Broad focus Tune.

Table B2. Results of linear mixed effects models for F0 measurement points
with the Narrow focus Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	*SE*	*p*
'auxiliary low'	Echo Tune	-0.43	0.26	0.10
'participle high'	Echo Tune	0.27	0.19	0.16
'*wh*-word high'	Echo Tune	3.53	0.23	< 0.001
'final *wh*-phrase high'	Echo Tune	4.21	0.24	< 0.001
'antepenultimate low'	Echo Tune	3.67	0.29	< 0.001
'penultimate low'	Echo Tune	3.93	0.35	< 0.001
'ultimate high'	Echo Tune	4.11	0.36	< 0.001
'pitch range'	Echo Tune	4.86	0.36	< 0.001
'tone copying'	Echo Tune	0.45	0.45	0.32
'sentence-final pitch movement'	Echo Tune	-0.32	0.53	0.54

Note: The reference category is the Narrow focus Tune.

Duration

Table B3. Results of linear mixed effects models for duration
with the Echo Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	SE	p
final syllable of the participle (syl.5)	Broad focus Tune	-7.50	2.79	< 0.01
wh-word *quel* 'which' (syl.6)	Broad focus Tune	-25.80	3.23	< 0.001
	Narrow focus Tune	-25.85	3.20	< 0.001
wh-phrase (syl.6 to 8)	Broad focus Tune	-31.21	5.24	< 0.001
	Narrow focus Tune	-33.27	5.20	< 0.001
penultimate syllable (syl.11)	Broad focus Tune	11.41	2.18	< 0.001
	Narrow focus Tune	6.16	2.17	< 0.01
ultimate syllable (syl.12)	Broad focus Tune	29.5	3.99	< 0.001
	Narrow focus Tune	6.67	3.96	0.09

Note: The reference category is the Echo Tune.

Table B4. Results of linear mixed effects models for duration
with the Narrow focus Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	SE	p
ultimate syllable (syl.12)	Broad focus Tune	22.83	4.26	< 0.001

Note: The reference category is the Narrow focus Tune.

Intensity

Table B5. Results of linear mixed effects models for intensity
with the Echo Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	SE	p
wh-word *quel* 'which' (syl. 6)	Broad focus Tune	1.07	0.28	< 0.001
	Narrow focus Tune	0.69	0.28	< 0.05

Note: The reference category is the Echo Tune.

Table B6. Results of linear mixed effects models for intensity
with the Broad focus Tune as reference category

MEASUREMENT	FIXED EFFECTS	β	SE	p
Average of the average intensity of all twelve syllables	Echo Tune	-1.00	0.17	< 0.001
	Narrow focus Tune	-0.99	0.19	< 0.001

Note: The reference category is the Broad focus Tune.

Appendix C (Chapter 5)

Interveners in the literature

Table 1 in Chapter 5 lists the expressions that have been mentioned in at least one publication as an intervener for French *wh*-in-situ questions. A list of the relevant publications, sorted by category of intervener, is provided in Table C1 below. The symbol '^' in the table marks the expressions that receive only very few mentions in the literature.

Table C1. The expressions that have been mentioned in at least one publication as an intervener for French *wh*-in-situ questions

INTERVENERS	PUBLICATIONS
Negation: *pas* 'not' *pas* 'not'	Adli (2004; 2006); Baunaz (2005; 2011; 2016); Beyssade (2006); Bošković (1998; 2000); Bošković & Lasnik (1999); Boucher (2010); Chang (1997); Cheng & Rooryck (2000); Engdahl (2006); Hamlaoui (2010; 2011); Mathieu (1999; 2002; 2009); Munaro, Poletto & Pollock (2001); Poletto & Pollock (2015); Shlonsky (2012); Starke (2001)
Negation: other *personne* 'nobody'; *jamais*^ 'never'; *aucun N*^ 'no N'; *aucun des N*^ 'none of the N'	Baunaz (2011); Beyssade (2006); Chang (1997); Cheng & Rooryck (2000); Hamlaoui (2010); Mathieu (2002); Poletto & Pollock (2015); Shimelman (2008); Zubizarreta (2003)

Universal	Adli (2006); Baunaz (2005; 2011; 2016);
tous les N 'all the N'; *tout le*	Beyssade (2006); Chang (1997); Cheng &
monde 'everybody'; *toujours*	Rooryck (2000); Hamlaoui (2010);
'always'; floating *tous* 'all';	Mathieu (1999; 2002); Poletto & Pollock
chacun des N 'each of the N';	(2015); Shimelman (2008); Zubizarreta
chacun 'each' (non-floating);	(2003)
*chaque N^* 'each N'; floating	
*chacun^* 'each'	

Focus expression	Engdahl (2006); Hamlaoui (2010; 2011);
seulement X 'only X'; *seul X^*	Mathieu (1999; 2002); Zubizarreta (2003)
'only X'; *même X^* 'even X';	
contrastive focus	

Indefinite expression	Adli (2004; 2006); Boucher (2010);
plusieurs N 'several N'; *la*	Hamlaoui (2011); Mathieu (2002);
*plupart des N^* 'most of the	Shimelman (2008)
N'; *plus de cinq N^* 'more	
than five N'; *exactement cinq*	
*N^* 'exactly five N'; *certains*	
*N^* 'certain N';	
*un N^* 'an N'; *quelqu'un^*	
'someone'	

| **Frequency adverb** | Hamlaoui (2010; 2011); Mathieu (1999; |
| *souvent* 'often' | 2002) |

Degree quantifier	Mathieu (2002); Zubizarreta (2003)
*beaucoup^* 'a lot'; *trop^* 'too	
much'; *peu^* 'little'	

***Wh*-phrase**	Adli (2006); Baunaz (2005); Bošković
with intermediate *wh*-	(1998); Chang (1997); Cheng & Rooryck
phrase; with *si* 'whether'	(2000); Mathieu (2002); Shlonsky (2012)

Appendix D (Chapter 6)

Information provided to participants (in French)

This appendix presents the information that was given to participants of the two rating studies described in Sections 2 and 3 of Chapter 6. Below, I subsequently provide:

    a. the general information that was given about the study
    b. a request to fill in the questionnaire with attention
    c. the phrasing of the judgment task, asking participants how natural the sentence appeared to them in that context in informal language

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Merci de votre participation à ce sondage. Dans le cadre du projet *Understanding Questions*, financé par l'organisation néerlandaise pour la recherche scientifique (NWO), nous cherchons à comprendre si, en français parlé et informel, certaines phrases sont plus ou moins naturelles, selon le contexte dans lequel elles sont utilisées.

Pendant l'expérience, vous verrez apparaître sur l'écran une série de phrases en français, chacune précédée par une courte description du contexte (correspondant au cadre de la conversation). Pour chaque phrase française, il vous sera demandé de juger à quel point la phrase paraît naturelle dans le contexte présenté. Il n'y a pas de bonne ou de mauvaise réponse, car votre réponse doit être basée sur votre intuition personnelle. Cependant, gardez à l'esprit que cette étude examine le type de français parlé dans des conversations informelles de tous les jours. Veillez s'il vous plaît à lire très attentivement les descriptions du contexte.

En paiement pour votre participation, vous recevrez 5,05 euros. L'expérience aura une durée totale d'environ trente minutes. Vous pouvez renoncer au sondage à tout moment et sans justification. Pour tout renseignement additionnel concernant cette étude, vous pouvez contacter le chercheur : Aliza Glasbergen-Plas, doctorante à l'université de Leiden (a.glasbergen-plas@hum.leidenuniv.nl).

Toutes les données recueillies dans le cadre de cette étude seront traitées et enregistrées de manière anonyme. Elles ne seront pas accessibles à des personnes non autorisées et ne permettront pas d'identifier personnellement un participant.

Veuillez nous aider pour ce sondage en lisant bien attentivement les contextes. Le sérieux de vos réponses sera vérifié.

Merci pour votre aide !

Dans ce contexte, cette phrase vous paraît-elle naturelle dans le langage courant ? Pour répondre à cette question, placez le curseur sur l'échelle ci-dessous :

Pas naturel   Naturel

Appendix E (Chapter 6)

Materials of the rating study reported in Section 2

This appendix contains the materials used in the rating study reported in Section 2 of Chapter 6. The study had three conditions, which consisted of three types of context preceding a French *wh*-in-situ question:

    A. Out of the blue, avoiding Maximal Givenness
    B. Maximal Givenness (non-echoic)
    C. Echo question context

Below, I mark the items used in each condition as *O* for 'Out of the blue context' (Condition A), *MG* for 'Maximal Givenness context' (Condition B) and *E* for 'echo question context' (Condition C). Every target sentence was rated in each of the three conditions, resulting in for instance item *O1*, item *MG1* and item *E1*.

O1

Tu décides de rendre visite à ta famille. Quand tu arrives, tes parents sont là mais ta sœur, Caroline, s'est absentée pour aller en ville. Quelques heures plus tard, elle rentre. Tu lui dis :

      « Ah enfin tu es rentrée ! Alors, tu as acheté des quoi ? »

MG1

C'est la saison des soldes. Tu tombes sur trois amies à toi, Charlotte, Marianne et Alice, qui sont allées en ville pour faire du shopping. Elles ont toutes acheté des nouvelles chaussures. Charlotte te dit qu'elle a acheté des Converse, Marianne des Nike. Tu te tournes vers Alice et lui demandes :

      « Et toi, tu as acheté des quoi ? »

E1

Tu es en train de partir de chez toi. Tu aperçois ton voisin, qui est un bon ami à toi, devant sa porte. Intrigué(e), tu regardes la grosse boîte qu'il a dans ses bras. Lorsqu'il voit que tu la regardes, il dit : « j'ai acheté des... (une voiture klaxonne) ». Puisque tu n'as pas entendu ce qu'il a dit à cause du klaxon, tu lui demandes :

> « Tu as acheté des quoi ? »

O2

Tu es au travail. Tu vois une de tes collègues revenir après avoir pris une pause. Intrigué(e), tu lui demandes :

> « Alors, tu as mangé des quoi ? »

MG2

Le nouveau semestre universitaire vient de commencer. Trois de tes bons amis sont allés en vacances aux Antilles. Tu les entends discuter de spécialités culinaires antillaises, plus précisément, d'en-cas. Tu te joins à leur conversation. Alice te dit qu'elle a mangé des acras de morue, Antoine des beignets de banane. Tu te tournes vers Rémi et lui demandes :

> « Et toi, tu as mangé des quoi ? »

E2

Ton petit frère a passé l'après-midi à la fête foraine avec ta maman. Quand ils rentrent, le chien les accueille chaleureusement. Ton frère saute dans tous les sens. Il te dit, excité : « j'ai mangé des... (le chien aboie) ». Comme tu n'as pas entendu ce qu'il a mangé, tu lui demandes :

> « Tu as mangé des quoi ? »

O3

Tu rentres chez toi lorsque tu aperçois ton voisin dans la rue. Vous discutez un moment, puis tu te rends compte qu'il a un Tupperware dans les mains. Tu lui demandes :

> « Tiens, tu as fait des quoi ? »

MG3

Tu es à la maison lorsque tes trois petits frères rentrent de l'école. Ce matin, ils ont fait des activités manuelles. Le plus grand te dit qu'il a fait des ronds de serviette, le deuxième des dessous de verre en bois. Tu te tournes vers le plus petit et lui demandes :

> « Et toi, tu as fait des quoi ? »

E3

Tu es prof dans un lycée. Lorsque tu quittes ta salle de classe, tu croises une de tes collègues dans le couloir. Vous commencez à discuter du goûter de fin d'année que vous allez organiser. Elle énumère tout ce qu'elle a fait jusqu'ici et ajoute : « j'ai même fait des… (la sonnerie retentit) ». Comme tu n'as pas entendu ce qu'elle a fait à cause de la sonnerie, tu lui demandes :

> « Tu as fait des quoi ? »

O4

Tu retrouves des copains à un festival. Vous restez sur place tout le week-end. À la fin du week-end, tandis que vous rangez vos affaires, tu dis à un de tes amis :

> « Au fait, tu as goûté des quoi ? »

MG4

Tu te rends à une soirée dégustation. Tu y rencontres trois amis à toi, Marie, Thomas et Laura. Ils te disent qu'ils ont tous goûté des amuse-bouches. Marie te dit qu'elle a goûté des feuilletés au fromage, et Thomas des petits fours à la tomate. Tu te tournes vers Laura et lui demandes :

> « Et toi, tu as goûté des quoi ? »

E4

Tu es étudiant(e) au lycée et tu sors de ton cours d'espagnol. Tu discutes avec un garçon de ta classe qui te dit qu'il s'est senti mal après avoir mangé quelque chose pour la première fois. Il te dit alors : « j'ai goûté des... (la sonnerie retentit bruyamment) ». Comme tu n'as pas entendu ce qu'il a goûté à cause de la sonnerie, tu lui demandes :

> « Tu as goûté des quoi ? »

O5

Tu es invitée à une soirée chez des amis. La musique te plaît beaucoup. Il y a une bonne ambiance et vous commencez à danser. Tu dis à une amie :

> « Au fait, tu as apporté des quoi ? »

MG5

Tu retrouves ta grand-mère, ta mère et ton frère pour un pique-nique, le dimanche. Ils ont préparé quelque chose de leur côté et ont tous apporté des desserts. Ta grand-mère te dit qu'elle a apporté des biscuits, et ta mère des fruits. Tu demandes alors à ton frère :

> « Et toi, tu as apporté des quoi ? »

E5

Tu pars en "week-end camping" avec ton cousin. Vous marchez ensemble jusqu'à la gare. Il t'explique que c'est important d'être bien équipé quand on part en camping, et te dit : « j'ai apporté des... (un enfant à côté de vous hurle tout à coup) ». Comme tu n'as pas pu entendre ce que ton cousin a dit à cause du cri, tu lui demandes :

> « Tu as apporté des quoi ? »

O6

Tu passes le réveillon du Nouvel An avec quelques connaissances. Un ami te parle déjà du prochain, et te dit qu'il aimerait bien le passer dans un chalet en montagne, pour changer. Tu lui dis :

> « C'est une bonne idée ! Sinon, tu as préparé des quoi ? »

MG6

Tu as invité quelques collègues à dîner chez toi : Stéphane, Mathieu et Manon. Tes trois invités arrivent en même temps et au moment d'ouvrir la porte, tu découvres qu'ils ont tous apporté des amuse-bouches. Stéphane te dit qu'il a préparé des cannelés aux carottes, et Mathieu des sablés au parmesan. Tu regardes Manon et lui dis :

  « Et toi, tu as préparé des quoi ? »

E6

Tu es en ville avec ta meilleure amie, assis(e) sur un banc. Elle vient de fixer une date pour son mariage, et te raconte qu'elle a déjà commencé les préparatifs. Elle te dit : « j'ai préparé des... (soudainement, une moto démarre à côté de vous) ». Comme tu n'as pas entendu ce qu'elle a préparé à cause du bruit, tu lui demandes :

  « Tu as préparé des quoi ? »

O7

Tu as pour projet d'organiser une sortie en famille. Pour cela, tu demandes de l'aide à une amie qui fait souvent ce genre de sorties. Après avoir discuté pendant un moment des endroits qu'elle connaît, tu lui demandes :

  « D'ailleurs, tu as vu des quoi ? »

MG7

Tu rends visite à ta famille. En ce moment de retrouvailles, tout le monde a beaucoup de choses à se raconter. Tes petits-cousins te parlent de leur journée au zoo de la veille. Ils ont tous vu des animaux sauvages. Alexandre te dit qu'il a vu des éléphants et Antoine des girafes. Tu te tournes vers Emma et lui demandes :

  « Et toi, tu as vu des quoi ? »

E7

Tu es en randonnée avec un ami. À un moment donné, vous décidez de vous séparer pour voir lequel de vous deux arrivera le plus vite en haut. Lorsque tu le retrouves, il te dit : « tu vas jamais me croire, mais j'ai vu des... (le cri d'un animal survient) ». Puisque tu n'as pas entendu ce qu'il a vu, tu lui demandes :

    « Tu as vu des quoi ? »

O8

Tu discutes avec ta petite sœur qui est en maternelle. Elle te raconte sa journée à l'école, et te dit qu'elle s'est disputée avec sa meilleure copine Julie. Tu lui dis :

    « Ça va s'arranger, ne t'inquiète pas ! Au fait tu ne m'as pas dit,
     tu as peint des quoi ? »

MG8

Tu retrouves trois amis dans un café, Estelle, Fabien et Séverine. Ils te disent qu'ils ont participé à un atelier peinture la veille et qu'ils ont tous peint des natures mortes. Estelle te dit qu'elle a peint des fleurs, et Fabien des fruits. Tu te tournes vers Séverine et lui demandes :

    « Et toi, tu as peint des quoi ? »

E8

Tu fais de la peinture sur toile avec tes parents dans la cuisine. À un moment, ta mère décide de faire une pause, et va préparer des smoothies. Tu demandes à ton père ce qu'il a commencé à peindre. Il te dit alors : « j'ai peint des... (le bruit du mixeur couvre la fin de sa phrase) ». Puisque tu n'as pas entendu ce qu'il a peint à cause du bruit, tu lui demandes :

    « Tu as peint des quoi ? »

O9

Tu as un fils de 12 ans. Un soir, en arrivant à la maison après ta journée de travail, tu trouves ton fils dans sa chambre. Tu vois que des feuilles de papiers sont éparpillées partout sur son bureau. Tu lui demandes de venir t'aider dans la cuisine. Vous discutez tout en préparant le repas du soir. Pendant la cuisson, tu lui demandes :

> « D'ailleurs, tu ne m'as pas dit, tu as écrit des quoi ? »

MG9

C'est le dernier jour du plus grand concours d'écriture de l'année. Tu y as participé avec des amis à toi qui partagent ta passion pour l'écriture. Maintenant que vous avez tous envoyé vos travaux, vous pouvez discuter de vos choix. Vous deviez notamment choisir quel type de texte écrire. Léa te dit qu'elle a écrit des nouvelles et Tristan des poèmes. Tu te tournes vers Marie et lui demandes :

> « Et toi, tu as écrit des quoi ? »

E9

Tu vis seule avec ton fils de 13 ans. Après avoir passé un coup de fil, tu vas vérifier s'il a fini ses devoirs. Tu vois qu'il a rangé ses cahiers et est maintenant sur son ordinateur. En voyant ton regard interrogateur, il te dit : « j'ai fini mes devoirs alors je me suis mis à faire autre chose. J'ai écrit des... (la machine à laver de la salle de bain se met à vibrer fortement) ». N'ayant pas entendu la fin de sa phrase à cause du bruit causé par la machine à laver, tu lui demandes :

> « Tu as écrit des quoi ? »

O10

Tu vas faire un voyage en Italie avec une amie. Vous avez prévu de passer l'après-midi à le programmer. Vous utilisez son ordinateur pour vos recherches. Dans l'historique, tu vois que ton amie a visité plusieurs fois le site le bon coin. Après avoir retrouvé les pages web qui concernent votre voyage, vous passez en revue tous les lieux que vous aimeriez visiter. Puis tu demandes à ton amie :

> « Tiens d'ailleurs, tu as vendu des quoi ? »

MG10

Tu es lycéenne et l'été approche. Tu cherches une solution pour financer tes vacances entre amies, en Italie. Par chance, tes amies semblent avoir trouvé une super idée. Elles t'expliquent qu'elles ont passé la semaine à vendre des bijoux qu'elles ne portaient plus. Émilie te dit qu'elle a vendu des colliers et Anaïs des bracelets. Tu te tournes vers Amandine et lui demandes :

« Et toi, tu as vendu des quoi ? »

E10

Tu promènes ton chien quand tu croises ton ami Sébastien en train de charger sa voiture. Tu vas le saluer et lui demandes ce qu'il fait dans le coin. Il te dit : « je reviens de la brocante, j'ai vendu des… (le bruit des travaux dans la rue vous assourdit) ». N'ayant pas entendu ce qu'il a dit à cause des travaux, tu lui demandes :

« Tu as vendu des quoi ? »

O11

Tu appelles un ami pour prendre de ses nouvelles. Il te raconte qu'il vient de passer la journée en garde à vue au commissariat. Inquiet(ète), mais aussi énervé(e) contre ton ami qui a encore fait une bêtise, tu lui proposes de passer chez lui. Après avoir discuté de tout et de rien, tu finis par demander :

« Bon alors, tu as volé des quoi ? »

MG11

Tu vas passer la journée chez ton ami Aurélien. Quand tu arrives chez lui, Erwan et Alexandre sont déjà là. Ça fait longtemps que vous ne vous êtes pas vus. Vous parlez de votre jeunesse. Erwan parle de la fois où vous aviez volé des trucs au supermarché. Tu ne t'en souviens plus, alors Erwan t'explique qu'il a volé des montres et Aurélien des bagues. Tu te tournes vers Alexandre et lui demandes :

« Et toi, tu as volé des quoi ? »

E₁₁

Tu es en train de marcher dans ton quartier pour passer le temps quand tu croises un ami à toi. Tu vas le saluer et lui demandes comment il va. Il te dit : « Bah écoute ça va, mais faut que je me dépêche de rentrer, j'ai volé des… (des bruits de sirènes de police retentissent au loin) ». Ton ami commence à courir alors tu fais de même. Comme tu n'as pas entendu ce qu'il a dit, tout en courant, tu demandes :

> « Tu as volé des quoi ? »

O₁₂

Tu es étudiant à l'université. Un jour, tu vas chez un ami pour travailler avec lui. Vous commencez par réviser votre cours sur la culture cinématographique, puis vous faites une pause avant d'étudier les autres matières. Vous parlez des vacances d'été qui approchent. Soudain, tu demandes à ton ami :

> « Au fait, tu as filmé des quoi ? »

MG₁₂

Tu fais des études dans un IUT. Tu as pris du retard pour le projet de vidéos que tu dois rendre dans quelques jours à ton prof. Tu demandes de l'aide à tes amis. Ils t'expliquent sur quel type de vidéos ils ont choisi de travailler. Valentin te dit qu'il a filmé des courts-métrages et Julien des publicités. Tu te retournes vers Alicia et lui demandes :

> « Et toi, tu as filmé des quoi ? »

E₁₂

Tu es étudiant. Un matin, tu rejoins tes amis dans le hall de la fac pour discuter avant d'aller en cours. Vous parlez de ce que vous avez fait la veille. Mélanie a travaillé sur le projet de vidéos à rendre à Mme Blandeau. À propos du projet, elle te dit : « j'ai filmé des… (un groupe d'étudiants sort de la salle de cours au même moment) ». Comme tu n'as pas entendu ce qu'elle a dit à cause des étudiants qui faisaient du bruit, tu lui demandes :

> « Tu as filmé des quoi ? »

O13

Tu es étudiant à l'université. Les vacances de la Toussaint viennent de se terminer. Le jour de la reprise, tu retrouves tes amis dans la salle avant le début du cours. Vous discutez de ce que vous avez fait pendant les vacances. Puis, le prof entre et le cours commence. Au bout d'un quart d'heure, vous reprenez votre conversation en chuchotant. Tu demandes à Marine :

    « Au fait, tu as sculpté des quoi ? »

MG13

Tu suis régulièrement un cours du soir à l'école d'art. Tu n'as pas pu y assister la semaine dernière. Tu apprends que tu dois réaliser une sculpture pour une exposition. Tu demandes alors aux autres élèves ce qu'ils ont choisi de faire. Anna te dit qu'elle a sculpté des figurines et Clémence des visages. Tu te tournes vers Jules et lui demandes :

    « Et toi, tu as sculpté des quoi ? »

E13

Tu manges chez ton amie Jeanne ce midi. Vous discutez tout en mangeant. Elle te parle de ses cours du soir à l'école d'art. Tu lui demandes ce qu'elle a fait pendant ses cours récemment. Elle te dit : « La semaine dernière, j'ai sculpté des... (le son d'une alarme de téléphone retentit au même moment) ». Jeanne coupe l'alarme. Puisque tu n'as pas entendu ce qu'elle a dit à cause du bruit de l'alarme, tu demandes :

    « Tu as sculpté des quoi ? »

O14

Tu travailles dans une agence d'architecture. Tu fais un bilan avec une collègue pour faire le nouveau planning de la semaine. Elle te parle des projets qu'elle a pu finir la semaine dernière. Vous discutez ensuite de ce qu'il reste à faire. Ta collègue va vous chercher des cafés. Quand elle revient, tu lui demandes :

    « Au fait, tu as dessiné des quoi ? »

MG14

Tu as une fille qui est en 6ème. Tu vas la chercher à la sortie du collège et tu passes aussi prendre ses deux meilleures amies qui viennent à la maison pour la soirée. Dans la voiture, elles te parlent de leur journée et notamment des dessins qu'elles ont fait. Ta fille raconte qu'elle a dessiné des chevaux tandis qu'Isabelle a dessiné des fruits. Tu demandes alors à Elena :

> « Et toi, tu as dessiné des quoi ? »

E14

Tu es dans le parc avec une amie. Vos enfants sont en train de jouer en face de vous. Vous en profitez pour discuter. Ton amie te parle de ses cours à l'école d'art. Elle te dit : « Pour une exposition, j'ai dessiné des... (un groupe de personnes passe bruyamment à côté de vous) ». N'ayant pas entendu ce qu'elle a dit à cause du bruit, tu lui demandes :

> « Tu as dessiné des quoi ? »

O15

Tu es lycéen(ne). Un jour, tu vas chez ton amie Pauline pour faire vos devoirs. Pauline te dit qu'elle a fini le projet d'écriture dont vous aviez parlé la semaine dernière. Vous sortez vos cahiers de maths. Pauline finit son exercice avant toi alors elle va vous chercher à manger. Quand elle revient, tu lui demandes :

> « Tiens d'ailleurs, tu as inventé des quoi ? »

MG15

Tu es au lycée. Tu travailles sur la pièce de théâtre de l'école avec des amis. Vous vous retrouvez pour faire un point sur l'avancée de votre projet. C'est toi qui supervises le projet, alors tu demandes à tes camarades où ils en sont dans la conception de la pièce. Ils devaient chacun inventer des éléments de l'histoire. Victor te dit qu'il a inventé des personnages, et Jérémie des lieux pour la trame de l'histoire. Tu te tournes alors vers Tristan et lui demandes :

> « Et toi, tu as inventé des quoi ? »

E15

Tu as un fils de 9 ans. Il est rentré de l'école il y a peu de temps et il t'aide à préparer le dîner. Tout en coupant des légumes, il te raconte sa journée. À un moment, il dit : "j'ai même inventé des... (le bruit de l'eau du robinet couvre sa voix)". Puisque tu n'as pas pu entendre ce qu'il a dit à cause du bruit de l'eau, tu lui demandes :

> « Tu as inventé des quoi ? »

Appendix F (Chapter 6)

Materials of the rating study reported in Section 3

This appendix contains the materials used in the rating study reported in Section 3 of Chapter 6, which investigated several properties *wh*-in-situ questions uttered out of the blue. The study had three conditions:
  A. Indirect question
  B. Adjunct island
  C. Long-distance question
There were fifteen items in each condition.

Condition A: Indirect question

01

Tu es membre d'un club de tennis. Tu as joué un bon match et maintenant tu bois un verre avec ton partenaire de tennis. Avant de reprendre l'entraînement, vous discutez de ce que vous allez faire ce soir. Tu dis :

> « Tiens d'ailleurs, ta copine m'a demandé j'ai préparé quoi pour le pique-nique. »

02

Tu rencontres un de tes amis dans la rue. Vous vous installez dans un café et il te parle de son travail. En voyant un touriste marcher, tu lui dis :

> « Ah tiens d'ailleurs, ta sœur m'a demandé j'ai visité quoi à Paris. »

03

Tu t'en vas au boulot et tu décides d'y aller à pied. En arrivant, tu croises ton collègue et vous discutez de la pluie et du beau temps. Vous arrivez sur votre lieu de travail et avant de vous séparer, tu lui dis :

> « Ah, au fait, le patron m'a demandé j'ai fait quoi hier. »

04

Tu es à la maison en famille. Ta sœur rentre de voyage et toute la famille en parle. Elle a apporté plein de souvenirs et a beaucoup de choses à raconter. La discussion s'éternise. Soudain, tu t'exclames :

« Sinon, Emma m'a demandé j'ai préparé quoi pour le dîner. »

05

Ton ami Guillaume et toi fréquentez régulièrement un café qui propose des activités variées. Comme à votre habitude, vous vous installez dans ce café pour discuter. Vous parlez des derniers examens de littérature. La discussion est un peu ennuyante. Au bout d'un moment, tu dis :

« Sinon, Justine m'a demandé j'ai prévu quoi pour ce soir. »

06

Tu t'en vas à la campagne avec ta famille pendant les vacances. Pendant le trajet, tu parles avec ta sœur Emilie du paysage et de ce que vous pourrez faire une fois arrivés. Après une longue discussion, tu dis :

« Au fait, Alex m'a demandé j'ai prévu quoi
   pour la fin des vacances. »

07

Tu te balades sur les bords de la Loire, quand tu remarques ton amie Sandra assise sur la berge avec toutes ses affaires pour pêcher. Tu lui fais signe et la rejoins. Vous discutez des poissons de la Loire en attendant une autre amie. Après un moment de silence, tu regardes vos sacs et lui dis :

« Sinon, Marine m'a demandé j'ai apporté quoi
   pour cet après-midi. »

08

Tu te rends à l'université pour assister à ton cours de sciences. Pendant que le professeur fait son cours, tu parles avec ton ami Lucas des résultats du dernier match. Entre deux chuchotements, tu dis :

« Eh ! D'ailleurs, Chloé m'a demandé j'ai prévu quoi
pour la fête de jeudi. »*09*

Tu prépares à manger pour le repas du midi. Ton frère rentre à la maison pour sa pause déjeuner et vous discutez de vos cours au lycée. À un moment, tu dis :

> « Tiens d'ailleurs, maman m'a demandé j'ai lu quoi
>
>   pour le cours de français. »

10

Tu es parti en voyage pour visiter les châteaux de la Loire avec deux amies. L'une des deux est partie plus tôt alors tu fais la visite avec ton autre amie. Vous parlez de l'histoire du château de Chambord et entre deux explications, tu dis :

> « Ah au fait, Alice m'a demandé j'ai choisi quoi
>
>   pour le repas de ce soir. »

11

Tu fais les boutiques en compagnie de Lucie. Vous passez toute votre matinée dans les magasins et vous décidez de faire une pause à midi. En vous reposant vous discutez de vos prochains achats pour l'après-midi. Avant de repartir, tu lui dis :

> « Rien à voir, mais Helen m'a demandé j'ai prévu quoi
>
>   pour mon anniversaire. »

12

Tu vis avec deux colocataires, mais il n'y en a qu'un seul qui est là aujourd'hui. Vous discutez ensemble de ce que vous allez cuisiner pour le repas du midi. Vous n'êtes pas d'accord et la discussion s'éternise. À un moment, tu dis :

> « Au fait, Liam m'a demandé j'ai décidé quoi pour la rénovation. »

13

C'est les vacances et tu profites de passer du temps avec ton frère. Vous parlez de ce que vous allez visiter, puis tu lui dis :

> « Tiens d'ailleurs, ta copine m'a demandé j'ai présenté quoi
>
>   à l'école d'art. »

14

Tu vas chez ton ami David pour jouer aux jeux vidéos. Ton frère est censé vous rejoindre plus tard mais vous commencez à jouer sans lui. À un moment, tu dis :

> « Au fait, Martin m'a demandé j'ai acheté quoi au supermarché. »

15

Tu fais du jardinage avec ton amie Sandra. Vous arrosez les plantes et taillez les arbres. En travaillant, vous discutez de la meilleure façon d'entretenir le jardin. Entre deux échanges d'astuces, tu dis :

> « Tiens d'ailleurs, Eva m'a demandé j'ai cueilli quoi dans la forêt. »

Condition B: adjunct island

01

Tu es en train de prendre ton petit-déjeuner avec ton père. Comme tous les matins, il lit le journal. Tu bois ton café et tout d'un coup, tu lui demandes :

> « Tiens je voulais te demander, il y a eu un scandale
>   parce que Trump a dit quoi ? »

02

Tu es chez toi et tu te prépares pour partir au lycée. Tu vois ta mère rentrer après sa nuit de travail aux urgences. Tu regardes les infos à la télé et soudain, tu lui demandes :

> « Et sinon dis-moi, il y a eu un accident
>   parce que le conducteur a consommé quoi ? »

03

Tu marches en ville avec une amie. Les rues sont bondées et les transports publics ne fonctionnent pas correctement. En passant dans le centre, vous décidez de faire un peu de shopping. Vous entrez dans une librairie quand soudain tu lui demandes :

> « Tiens d'ailleurs, les fonctionnaires font grève
> parce que le ministre a annoncé quoi ? »

04

Contrairement à tes collègues qui prennent les transports en commun, tu te rends au travail en voiture. En arrivant tu remarques que certains de tes collègues ne sont pas encore là. Quelques minutes après toi, l'un d'entre eux arrive. Tu lui dis :

> « Juste par curiosité, les bus sont en retard parce qu'il y a eu quoi ? »

05

Tu es en ville avec un ami et vous décidez de passer au bureau de tabac pour acheter des cigarettes. Il y a du monde et pendant l'attente, vous feuilletez les magazines sur le présentoir. Vous finissez par avoir vos cigarettes et vous ressortez. Quelques minutes plus tard, tu demandes :

> « Au fait, les sportifs souriaient parce qu'ils ont gagné quoi ? »

06

Tu décides de passer la journée à faire du shopping. Tu proposes à une amie de venir avec toi. En marchant vous passez devant son ancien lieu de travail. Tu te tournes vers elle et lui demandes :

> « Tiens, dis-moi, le restaurant a fermé
> parce que les clients ont dit quoi ? »

07

Tu assistes à un cours de littérature avec un ami. Vous discutez discrètement de vos vacances. Puisque c'est le premier cours, le professeur fait l'appel et tu n'entends pas certains noms. Tu demandes à ton ami en chuchotant :

> « Tiens d'ailleurs, Yvan a arrêté ses études parce qu'il a raté quoi ? »

08

Tu te rends sur ton lieu de travail. Avant la réunion, tu entends tes collègues discuter du bruit des sirènes de la nuit dernière. Une fois la réunion finie, vous prenez une pause. Tu en profites pour demander :

« Au fait, la police a arrêté quelqu'un parce qu'il a fait quoi ? »

09

Tu travailles dans un entrepôt. Tu aperçois un collègue dans le bureau du patron. Tes autres collègues sont en train de porter des cartons à bout de bras. Tu vas les voir et leur donnes un coup de main. Un bruit métallique retentit. Tu dis à tes collègues :

« Tiens d'ailleurs, Denis s'est fait rappeler à l'ordre
   parce qu'il a manigancé quoi ? »

10

Tu organises une soirée pour ton anniversaire. Un de tes amis est en train de t'aider à faire la liste des invités. Après avoir trouvé une date et un lieu qui pourrait convenir à tout le monde, tu dis :

« Au fait, Dylan s'est disputé avec sa copine parce qu'il a dit quoi ? »

11

Tu es en week-end au Portugal avec des amis. Le premier jour, seul ton ami Thomas t'accompagne à la plage. Vous profitez du soleil et discutez de ce que vous allez visiter le lendemain. Puis, tu demandes :

« D'ailleurs, Elliot est resté à l'hôtel parce qu'il s'est passé quoi ? »

12

Tu es chez des amis pour fêter les 16 ans d'Antoine. Tu passes la soirée à danser et rire. Vers minuit, tu t'installes sur le canapé quelques minutes et tu discutes avec un ami. Vous parlez de tout et de rien tout en mangeant des gâteaux apéros. Soudain, tu demandes :

« Et sinon, Inès est privée de sorties parce qu'elle a fait quoi ? »

13

Ta meilleure amie t'appelle après une dispute avec son copain. Tu vas la rejoindre chez elle. Tu lui proposes d'aller faire les magasins pour se changer les idées. Vous achetez quelques nouveaux vêtements, puis vous vous installez dans un café. Vous parlez de vos achats, puis tu demandes :

« Sinon, Mathieu est fâché parce que tu as insinué quoi ? »

14

Tu travailles dans un magasin. Aujourd'hui, ta journée de travail se termine plus tard que d'habitude car un de tes collègues est absent. Tu dois fermer le magasin avec un autre de tes collègues. Vous finissez de nettoyer le sol tout en discutant. Après un moment de silence, tu demandes à ton collègue :

« Juste par curiosité, Quentin a des ennuis
   parce qu'il a décidé quoi ? »

15

Tu travailles à un stand de glaces pour l'été. Tu vois une dame arriver avec une poussette. Tu demandes à ta collègue si elle peut s'en charger car c'est l'heure de ta pause déjeuner. Une fois ta pause terminée, tu reviens aider ta collègue à servir les clients jusqu'à la fin de votre service. En marchant vers le parking, tu demandes à ta collègue :

« Juste par curiosité, la fillette de tout à l'heure pleurait
   parce qu'il y a eu quoi ? »

Condition C: long-distance question

01

Tu passes la journée chez toi et tu contactes un ami par téléphone. Vous parlez notamment des anniversaires passés dans le mois, et tu dis :

« Sinon, rien à voir, mais tu penses
   que Léo a préféré quoi de la soirée d'hier ? »

02

Tu es en vacances à la mer. Tu profites de la journée et tu parles avec un ami qui est venu avec toi. Vous discutez de ce que vous pouvez faire comme activité à la plage. Tu lui dis :

« Sinon, rien à voir mais tu penses qu'Eva a visité quoi à Nice ? »

03

Tu profites de ta journée de repos pour aller au cinéma. Tu proposes à deux amis de venir mais il y en a qu'un qui accepte. Tandis que vous faites la queue pour acheter vos places, vous discutez du film que vous allez voir. Soudain, tu dis :

« Sinon, tu penses qu'Alex a prévu quoi pour ce soir ? »

04

Tu passes ta matinée en ville et tu es dans le bus du retour. Un ami t'accompagne et il te propose de venir chez lui. Pendant le trajet, vous discutez de ce que vous allez faire dans l'après-midi, puis tu dis :

« D'ailleurs, tu penses que ta mère a préparé quoi pour ce midi ? »

05

Tu profites d'une journée ensoleillée pour te balader dans le parc public. Une amie qui habite à côté te rejoint. Tu entames une conversation sur les variétés de plantes du parc et de ses alentours. Puis, tu dis :

« Tiens d'ailleurs, tu penses
que l'architecte a décidé quoi pour ce bâtiment ? »

06

Tu quittes la maison de tes parents pour avoir plus d'indépendance. Tu es le dernier des enfants à partir. Tu discutes avec ta mère de ton futur appartement. Soudain, tu lui demandes :

« Tiens d'ailleurs, tu penses
que Sophie a emporté quoi pour chez elle ? »

07

Tu es étudiant(e) en sciences à l'université. Le cours se termine et tu parles de son contenu avec une amie qui l'a bien compris. Entre deux explications, tu dis :

« D'ailleurs, tu penses
que ton copain a révisé quoi pour les partiels ? »

08

Tu es élève au lycée. Avec ton amie Alicia, tu attends que vos parents viennent vous chercher à la sortie de l'école. Vous réfléchissez à ce que votre ami de classe va dire à ses parents à propos des heures de colle qu'il a récoltées. Tu lui dis :

« Sinon, tu penses que Dylan a dit quoi au directeur ? »

09

Tu es dans le bus pour rentrer chez toi. Tu es avec un ami qui a emménagé dans le même quartier que toi. Vous discutez de la soirée qui est prévue pour fêter son arrivée, puis tu dis :

« Juste par curiosité, tu crois que
Sandra a décidé quoi pour son appartement ? »

10

Tu vas à l'université à pied. Tu vois un ami qui va dans la même université que toi et tu le rattrapes pour lui dire bonjour. Vous parlez de ce que vous étudiez en ce moment, puis tu dis :

« Je change de sujet, mais tu crois
que la cafet' a proposé quoi aux nouveaux élèves ? »

11

Tu regardes la télé avec un ami. Vous décidez de l'éteindre et d'aller faire du vélo. Vous parlez du trajet que vous allez emprunter, puis tu lui dis :

« Tiens d'ailleurs, tu crois que
le président a annoncé quoi dans son communiqué de presse ? »

12

Tu recherches un emploi et tu demandes conseil à l'un de tes amis. Vous discutez de tes expériences professionnelles et tu lui dis :

« Et sinon, tu crois que ta sœur a appris quoi pendant son stage ? »

13

Tu es assis dans le bus qui va jusqu'à l'université. Tu parles avec un ami qui suit les mêmes cours que toi. Il te parle de ses projets pour l'été. Soudain, tu lui dis :

« Sinon, je pense à ça, tu crois
que le prof a prévu quoi pour l'examen ? »

14

Tu reviens de ton voyage de six mois en Australie. Tu constates que ta chambre a été nettoyée de fond en comble. Tu ne retrouves plus toutes tes affaires. Tu vois ton frère dans le couloir et vous discutez de ton voyage. Tout d'un coup, tu dis :

« Ah, rien à voir, mais tu crois
que maman a rangé quoi au grenier ? »

15

Tu te rends au café du coin pour aller voir ton ami Clément. Il est en train de lire le journal avec les dernières nouvelles et vous discutez des résultats du dernier match de foot. Pendant la conversation, tu dis :

« Et sinon, tu crois
que le juge a décidé quoi par rapport au ministre ? »

Samenvatting

Dit proefschrift gaat over een bepaald soort vraagzinnen: '*wh*-in-situvragen' in het Frans. '*wh*-in-situ' betekent dat het vraagwoord (*wie, wat, waarom*) niet vooraan in de zin staat, zoals in <u>*Wie zie je?*</u>, maar meer aan het einde van de zin, zoals in *Tu vois <u>qui</u>?*, dus met de volgorde 'je-ziet-wie'. (Het Frans heeft ook vraagzinnen waarin het vraagwoord aan het begin van de zin staat, maar die zijn niet het onderwerp van het proefschrift.) Franse *wh*-in-situvragen zijn in de literatuur omgeven door allerlei raadsels. Onderzoekers verschillen van mening over welke zinnen goed zijn en welke niet, nog los van waarom ze wel of niet goed zijn.

Het proefschrift gaat ook over een breder thema, namelijk de relatie tussen de eigenschappen van bepaalde vraagzinnen en aspecten van de context waarin iemand de vraag stelt. Het begrip 'context' verwijst hier naar de talige en niet-talige omgeving waarin een zin gebruikt wordt, zoals wat er in het eventuele voorafgaande gesprek al gezegd is en de situatie waarin de zin gezegd wordt, bijvoorbeeld wie de gespreksdeelnemers zijn en in welke setting het gesprek plaatsvindt. In de algemene taalwetenschap worden zinnen vaak los, zonder context bestudeerd. Bijvoorbeeld: Waarom voelt een zin met een bepaalde grammaticale structuur 'goed', en met een andere structuur niet (het deelgebied 'syntaxis')? Hoe wordt de betekenis van een zin opgebouwd vanuit alle losse woorden (het deelgebied 'semantiek')? Waarom heeft een zin juist deze intonatie en niet een andere (het deelgebied 'prosodie')? In dit proefschrift wordt echter nadrukkelijk aandacht besteed aan de rol van context. Het kan voor het beoordelen van een zin bijvoorbeeld uitmaken of iets eerder in het gesprek al ter sprake is gekomen, of niet. Het is wat raar om vanuit het niets te vragen: *Wat heb je van Stefan voor je verjaardag gekregen?* Een methodologisch probleem waar het onderzoek mee te maken had, is echter dat mensen vaak snel context ergens bij kunnen bedenken, waardoor een zin weer natuurlijk wordt: *degene tegen wie gesproken wordt, is waarschijnlijk jarig geweest; Stefan is vast iemand die hij of zij kent; Stefan heeft hem/haar vast iets gegeven...*

Het onderzoek in dit proefschrift doorkruist de drie hierboven genoemde deelgebieden van de taalwetenschap. Een deel van het onderzoek is kwantitatief (experimenten, statistiek) en een ander deel is kwalitatief (voorbeelden van Franse zinnen in context, daarop gebaseerde redeneringen). Hieronder bespreek ik de inhoud van het proefschrift in meer technisch detail.

Het proefschrift onderzoekt de eigenschappen van Franse *wh*-in-situvragen vanuit twee perspectieven, die beide te maken hebben met context. Dit zijn (1) de informatiestructuur van de zin: *focus* en *givenness* en (2) het onderscheid tussen reguliere vragen en *echovragen*. Ik leg deze termen verderop uit. Ik ga eerst in op focus en givenness, en de rol die deze begrippen spelen in het proefschrift, en daarna op het verschil tussen reguliere vragen en echovragen.

Focus en givenness

Het Engelse voorbeeld in (1) illustreert begrip givenness. In deze zin is *the singer* given, te zien aan de notatie $[\ ]_G$.

(1) Sinatra's reputation among industry musicians grew swiftly, and
     James always supPORted [the singer]$_G$.

The singer verwijst naar 'Frank Sinatra'. *Sinatra* is eerder in de zin al genoemd. Omdat *Sinatra* al genoemd is, is de zanger Frank Sinatra al *contextually salient*. Dat betekent zoiets als 'opvallend aanwezig in de context'. Omdat Frank Sinatra contextually salient is op het moment dat *the singer* gezegd wordt, is *the singer* given. In het Nederlands en Engels ligt er in de uitspraak vaak minder nadruk op woorden die given zijn. In (1) valt het accent daarom op *POR* in *supPORted*, en niet op *sing* in *singer*.
     De Engelse zinnen in (2) illustreren het begrip focus.

(2) a. [Mary invited JOHN]$_F$.
     b. [MAry]$_F$ invited John.

In (2a) is de hele zin de focus en in (2b) alleen *Mary* (te zien aan de notatie []$_F$). Het verschil is te horen aan de uitspraak. (2a) klinkt 'neutraal' met het accent op *JOHN*, maar in (2b) ligt het accent op *MAry* (op *MA*). Een spreker kan (2b) zeggen als het al duidelijk (salient) is dat iemand John heeft uitgenodigd, maar niet *wie* dat heeft gedaan; de zin in (2b) geeft aan dat dit Mary was. De zin in (2a) bevat geen informatie die al salient is door de voorafgaande context en kan bijvoorbeeld een antwoord zijn op de vraag *Wat is er gebeurd?*

Het is controversieel om aan te nemen dat focus op dezelfde manier een rol speelt in vraagzinnen met een vraagwoord. Traditioneel wordt namelijk aangenomen dat in vraagzinnen met een vraagwoord, het vraagwoord de focus is. Hiervoor zijn theoretische en empirische argumenten: er zijn bijvoorbeeld talen waarin een vraagwoord en een focus op dezelfde plek in de zin staan. Ik beargumenteer echter dat er ook talen zijn, waaronder het Frans, waarin de focus in vraagzinnen beïnvloed wordt door wat er al salient is in de context, net zoals in stellende zinnen (zinnen die geen vraag zijn).

Hoofdstuk 4 van het proefschrift beschrijft een experiment waarmee de uitspraak is onderzocht van Franse *wh*-in-situvragen in verschillende contexten. De contexten waren zo ontworpen dat de zinnen een focus op de hele zin zouden kunnen krijgen, zoals in (2a), of op een deel van de vraagzin, vergelijkbaar met (2b). Om dit experiment uit te kunnen voeren moest ik iets nieuws verzinnen. Je kunt dit onderwerp namelijk niet onderzoeken door mensen losse zinnen te laten voorlezen, zoals gebruikelijk is bij dit soort experimenten. Ik heb de Franse sprekers daarom kleine "gesprekjes" laten voeren waarin de zinnen waar het om ging, verstopt zaten. De Franse sprekers zagen op een scherm wat ze moesten zeggen en een stem die eerder door een Fransman was ingesproken, zei zinnen terug. De resultaten laten zien dat de intonatie van de Franse vraagzinnen (verder dezelfde zinnen) inderdaad anders wordt als de voorafgaande context in het gesprek anders is, net als bij de stellende zinnen in (2a) en (2b) hierboven.

Hoofdstuk 4 werpt ook licht op een punt van onenigheid in de literatuur over Franse *wh*-in-situvragen. Sommige auteurs stellen dat deze vragen verplicht eindigen met een sterke stijging in toonhoogte (een

'rise'), en anderen ontkennen dit. Het experiment laat zien dat de aanwezigheid van een toonhoogtestijging afhankelijk is van de focus. Als de focus de hele zin omvat (zoals in (2a)), is er geen sterke stijging. Het Frans gebruikt die stijging namelijk om te laten zien dat de focus maar een deel van de zin omvat, zoals het Engels dit laat zien met het accent op *MAry* in (2b). Het hoofdstuk geeft ook verder inzicht in hoe Franse sprekers met intonatie aangeven wat de focus van een zin is.

Het begrip givenness wordt in hoofdstuk 5 gebruikt om data te verklaren met betrekking tot *interventie-effecten*. De term interventie-effecten leg ik uit aan de hand van voorbeeld (3). In (3a) staat een Franse *wh*-in-situvraag en in (3b) een Franse vraagzin met het vraagwoord vooraan de zin; het vraagwoord 'wat' is in beide zinnen vetgedrukt. De betekenis van allebei zou moeten zijn: 'Wat heeft niemand gekocht?'.

(3) a. *Personne n'a acheté **quoi**?
        niemand   wat
    b. **Qu'** est-ce que *personne* n'a acheté?
        wat   niemand

De zin in (3b) is goed, maar de zin in (3a) is voor moedertaalsprekers onacceptabel (ongrammaticaal). Het enige verschil tussen de zinnen is echter de plaats van het vraagwoord. (Het verschil tussen *quoi* en *qu'est-ce que* is voor dit onderwerp niet relevant). Het probleem is de positie van het vraagwoord ten opzichte van de uitdrukking 'niemand'. Om redenen die niet helemaal goed begrepen worden is de volgorde 'vraagwoord > niemand' goed, maar de volgorde 'niemand > vraagwoord' niet. Er is een serie aan uitdrukkingen die net als 'niemand' het probleem in (3a) (interventie-effecten) veroorzaken. Een aanvullende puzzel is dat als een zin als (3a) in een bepaald soort context wordt geplaatst, de zin opeens wel goed is.

Voortbouwend op eerder werk stelt hoofdstuk 5 een generalisatie voor met betrekking tot het type context waarin interventie-effecten afwezig zijn. Ik laat zien dat dit contexten zijn die de hele *wh*-in-situvraag given maken. Vervolgens presenteer ik een mogelijke verklaring voor dit effect van context, die te maken heeft met hoe Franse *wh*-in-situvragen

geïnterpreteerd worden. Ik stel dat het Frans twee manieren heeft om deze vragen te interpreteren, en bij één ervan speelt de context een rol.

In hoofdstuk 6 bouw ik het voorstel dat het Frans twee mechanismes heeft om *wh*-in-situvragen te interpreteren, verder uit. Simpel gezegd: er zijn eigenlijk twee soorten Franse *wh*-in-situvragen. Ze zien er op het oog hetzelfde uit, maar hebben verschillende eigenschappen. De ene soort heeft een bepaald type context nodig om goed geïnterpreteerd te kunnen worden, namelijk een context die de hele zin given maakt. In deze soort zijn er geen interventie-effecten, maar worden er wel strenge eisen gesteld aan de context waarin de vraag gebruikt kan worden. De andere soort heeft geen specifieke context nodig (net zo min als Engelse of Nederlandse vraagzinnen of Franse vraagzinnen met het vraagwoord vooraan de zin). Deze soort heeft wel interventie-effecten. Een zin als (3a) is dus ongrammaticaal, behalve als hij gebruikt wordt in een heel specifieke context, een context die de hele zin given maakt.

Ik stel ook voor dat er twee groepen Franse sprekers zijn: de ene groep heeft alleen het mechanisme dat een specifieke context nodig heeft, in zijn/haar grammatica en de andere groep heeft beide mechanismes om een *wh*-in-situvraag te interpreteren. Jongere sprekers (bijvoorbeeld van 20 tot 35 jaar) behoren tot de tweede groep. Dit zou erop kunnen duiden dat er een taalverandering gaande is waarbij er een tweede mechanisme bij is gekomen. Dit voorstel (twee mechanismes waarvan sommige sprekers er maar een tot hun beschikking hebben) verklaart waarom er in de literatuur zo veel onenigheid is over de eigenschappen van Franse *wh*-in-situvragen, zoals over de vraag of deze zinnen nu wel of niet een speciale context nodig hebben.

In het Engels en Duits komen ook *wh*-in-situvragen voor, hoewel minder dan in het Frans en alleen in specifieke contexten, zoals in (4).

(4) Spreker A: I'm going to send the sourdough bread to
                the Southern Bakery, and the croissants to Barringers.

   Spreker B: I see, and the bagels you're going to send WHERE?

Hoofdstuk 6 van het proefschrift laat zien dat het type context waarin *wh*-in-situ voorkomt in het Engels en Duits veel lijkt op het type context dat

nodig is voor de eerste soort *wh*-in-situ in het Frans. Ik stel daarom in hoofdstuk 6 dat mijn analyse voor dat type Franse *wh*-in-situvragen ook vruchten zou kunnen afwerpen voor het Engels en Duits (en mogelijk andere talen).

Reguliere versus echovragen

Zoals ik zei onderzoekt het proefschrift de eigenschappen van Franse *wh*-in-situvragen vanuit twee perspectieven die te maken hebben met de voorafgaande context. Ik kom nu bij het tweede perspectief: het onderscheid tussen reguliere vragen en echovragen.

De Engelse vraagzin in (5) is een voorbeeld van een echovraag.

(5) Spreker A: John invited #####[noise].
    Spreker B: John invited who? (I did not hear you.)

Spreker B stelt een echovraag omdat hij/zij een deel van Spreker A's zin niet heeft verstaan. De echovraag 'echoot' de vorige zin. In tegenstelling tot een reguliere Engelse vraagzin als *Who did John invite?*, is de echovraag in (5) een *wh*-in-situvraag. Het Frans heeft naast gewone *wh*-in-situ vragen ook *wh*-in-situ echovragen. Daardoor kunnen een reguliere vraag en een echovraag er hetzelfde uitzien.

Het experiment in hoofdstuk 4 onderzoekt of er verschillen in intonatie zijn tussen reguliere Franse *wh*-in-situ vragen en *wh*-in-situ echovragen met dezelfde vorm. De resultaten laten duidelijke verschillen zien: sprekers maken in het Frans onderscheid tussen de twee soorten vragen door middel van intonatie.

In echovragen zijn er geen interventie-effecten (dus de zin in (3a) hierboven is goed als echovraag). Ik trek in hoofdstuk 5 in dit opzicht een parallel met de Franse *wh*-in-situvragen die een specifieke context nodig hebben: die vertonen immers ook geen interventie-effecten. Hoofdstuk 6 laat zien dat deze vragen en echovragen een aantal gemeenschappelijke eigenschappen hebben, maar dat er ook duidelijke verschillen zijn. Ik geef een eerste aanzet voor een analyse van echovragen.

Mogelijk hebben alle talen echovragen (het Nederlands heeft die zeker). Sommige talen, zoals het Engels en Duits, hebben ook *wh*-in-situvragen die alleen goed zijn als ze gebruikt worden in een bepaald soort context. Het Frans heeft, voor een deel van de Franse sprekers, daarnaast een tweede soort *wh*-in-situvragen, die geen speciale context nodig hebben. Zijn de Franse vragen die een speciale context nodig hebben helemaal hetzelfde (qua structuur en eigenschappen) als de *wh*-in-situvragen in het Engels en Duits? Welke andere talen hebben ook *wh*-in-situvragen zoals in het Engels en Duits, en gedragen die zich precies hetzelfde? Zijn er nog meer talen die twee soorten *wh*-in-situvragen hebben zoals het Frans? Dit zijn een aantal van de vragen die dit proefschrift oproept en die opgepakt kunnen worden in toekomstig onderzoek.

Acknowledgements

"Are you sure you want to hire someone like me", I asked during my informal "job interview" for the Ph.D. position. "I completed my BA here, but my MA was on language education. I didn't study syntax, semantics or prosody there, and I don't know anything about intervention effects." Lisa said something like: "Yes, that is true. But we think you can learn." I want to thank Lisa and Jenny for the great opportunity and the vote of confidence. It is rare for an employer to hire someone because they think the person will learn to do the job in the future.

The beginning was difficult. After being a teacher for five years, I felt like a master student again, and maybe I was. I took many courses: Lisa said that I should not only conduct my research project, but become a linguist. My first task was to set up a prosody experiment (now Chapter 4); I started by looking up the word 'prosody'. This experiment also proved more complex than expected, and I ended up designing a new elicitation paradigm for it.

While the job was difficult, the social side felt like a warm bath. My BA teachers welcomed me back. I enjoyed the interactions with Ph.D. candidates and senior staff:

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From the time my first results came in, I really enjoyed the work. I liked the feeling of pushing your brain to its limits, of creativity when coming up with new ideas, of writing and discovering how your text continues. I worked with Claartje Levelt, Floris Roelofsen (University of Amsterdam) and Stefan Glasbergen (Applied University of Amsterdam)

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Then my mother got ill. During the year of her illness and the period following her death, I was not myself. I thank all members of my project team – Jenny, Lisa, Stella, Leticia and Yany Yang – for being so understanding. Jenny was both supervisor and coach in this period and was wonderful. I am grateful to LUCL, in the person of Maarit van Gammeren, for giving me a generous extension of my contract to compensate the time I could not work full time. It allowed me to write the dissertation in its current form. This period made me feel fortunate to still have my other parents, as well as Tamar, Frans and Francien and my other in-laws and my close friends.

When the reading committee approved my dissertation in October 2020, the pandemic made a live defence, a proper closure of my time at LUCL, impossible. I postponed it and focused on moving house and starting my new job at Delft University of Technology.

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Curriculum vitae

Aliza Glasbergen-Plas was born on 24 April 1984 in Rotterdam. She obtained a BA degree in linguistics from Leiden University (2007, *cum laude*) and an MA degree in linguistics, specializing in language education, from the Free University of Amsterdam (2009, *cum laude*). During her BA studies, she spent a semester as an Erasmus student at the University of Nantes (France) and worked as a student-assistant for prof. dr. Lisa Cheng. As part of her MA studies, she conducted research as an intern at the SCO-Kohnstamm Institute in Amsterdam and the CED-Group in Rotterdam, after which she worked at the CED-Group for another year.

Following her graduation, Aliza spent five years working in language education. She taught literacy and Dutch as a second language in adult education ('inburgering') at both Sagènn re-integratie and Ttif.company, where she was the team coordinator. She also worked as a trainee educational advisor at HCO, advising teachers on the topic of language education for minority students. Finally, Aliza taught Dutch/communication at the Applied University of Rotterdam (Hogeschool Rotterdam), where she developed and taught integrated language courses (in which language learning is integrated with learning content).

Aliza conducted her Ph.D. research within the NWO project 'Understanding questions', which investigated the topic of questions from the combined perspective of different disciplines (syntax, semantics, prosody and processing). She was also involved in several projects outside of her dissertation topic, including studies on the language skills of secondary school minority students and on improving language skills within the context of history education.

Aliza currently works as a lecturer of communicative skills at the Delft University of Technology, where she also conducts research about teaching writing skills at the university level.