Abstract

In this paper, I discuss data which suggest that covert movement must satisfy constraints than overt movement does not, posing a challenge for the uniform characterization of Move as Move F (Chomsky 1995). I propose an alternative analysis: the WH operator that French WH phrases in situ contain moves to Spec-CP and leaves a trace which is non-referential. Since antecedent government is local, the intervention effects are thus expected. French WH phrases in situ in single WH questions always appear to denote functions ranging over higher order entities, even when the WH phrase is in object position.

1 Introduction

As is well-known, French has the possibility of fronting a WH phrase or of leaving it in situ in matrix clauses. Single WH in situ questions in French are not only used as echo, but also as standard questions asking for new information. No difference in interpretation between (1a) and (1b) comes to mind:

(1) a. Tu vois qui ce soir?
   you see who this evening
   b. Qui t vois ti ce soir ?
   who you see this evening
   ‘Who are you seeing tonight?’

These data have led some researchers (Aoun, Hornstein & Sportiche 1981; Lasnik & Saito 1992 to name just a few) to believe that French has a ‘mixed’ system with regard to the formation of WH interogatives. On this view, French is like English in that a WH expression can be moved overtly to Spec-CP, and like Chinese in that the WH
expression can remain in situ. However, the assumption of a ‘mixed’ system raises three serious problems, one conceptual, the other two empirical.

The conceptual problem is that theories in which economy is a central concept, such as the Minimalist Program (MP, Chomsky 1995), have problems allowing for (apparently) optional processes, such as the possibility of ‘overt’ movement alongside non-movement (or ‘covert’ movement). By the principle Procrastinate, delaying movement until LF is preferred. On this view, two derivations based on the same numeration are not expected to allow both (‘overt’) movement and no movement (‘covert’ movement).

The first empirical problem is that the distribution of WH in situ in French single WH questions, unlike the distribution of WH in situ in languages like Chinese, is highly restricted: the relevant alternative strategies in French (WH movement vs. WH in situ) do not behave identically with respect to other scopal elements in the sentence, a problem we will consider in detail in section 2. As noticed by Boskovic (1998a, b) Neg and C appear to be interveners for the licensing of WH in situ in French:

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\begin{align*}
(2) & \quad \text{a. } *\text{Jean ne mange pas quoi?} \\
& \quad \quad \text{Jean Neg eat not what} \\
& \quad \quad \text{b. } \text{Qu’est-ce que Jean ne mange pas?} \\
& \quad \quad \text{what that Jean NEG eat not} \\
& \quad \quad \text{‘What doesn’t John eat?’} \\
\end{align*}
\]  
(Boskovic 1998a:15)

\[
\begin{align*}
(3) & \quad \text{a. } *\text{Jean et Pierre croient que Marie a vu qui?} \\
& \quad \quad \text{Jean and Pierre believe that Marie has seen who} \\
& \quad \quad \text{b. } \text{Qui Jean et Pierre croient-ils que Marie a vu?} \\
& \quad \quad \text{who that Jean and Pierre believe-they that Marie has seen} \\
& \quad \quad \text{‘Who(m) do Jean and Pierre believe that Marie saw?’} \\
\end{align*}
\]  
(Boskovic 1998a:13)

This makes it impossible to attribute the alternatives solely to the absence or presence of a strong feature in C (see Aoun et al. 1981 for an account along those lines), since such a proposal fails to explain the asymmetry between (2a) and (2b) on the one hand and (3a) and (3b) on the other.

The second empirical problem is that WH in situ in French single WH interrogatives is only possible in direct questions. Contrary to most other optional WH movement

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1 Some researchers argue that WH in situ can occur in tensed clauses (see for example Aoun et al. 1981, Tellier 1991). However, my informants confirm that (3a) only receives an echo interpretation.
languages (e.g. Iraqi Arabic, Igbo, Bahasa Indonesian) and so-called ‘pure’ WH in situ languages (e.g. Chinese, Japanese), WH in situ in French is banned from embedded indirect questions:

(4) a. *Je me demande [CP Jean a vu qui].
   I myself ask Jean has seen who
b. Je me demande [CP qui Jean a vu ti].
   I myself ask who Jean has seen

‘I wonder who John saw.’

I believe that the two empirical problems must be dealt with properly before the conceptual problem can be addressed successfully. A solution to the two empirical problems may, in turn, shed light on the conceptual problem. Here, I concentrate on resolving the first empirical problem, leaving the second for further work.

I begin by arguing against Boskovic’s (1998a, b) analysis, which claims that the intervention effect in French is due to the locality of FF (head)-movement. His analysis is based on two assumptions: (a) ‘covert’ movement is FF movement, which is head movement and thus sensitive to intervening relativized heads, whereas ‘overt movement is XP movement; (b) WH phrases in situ sometimes move (namely for convergence) and sometimes not (namely if convergence does not require it).

The French facts lead Boskovic (1998a, b) to reject Chomsky’s (1995) uniform characterization of Move as Move F. The restrictions on French WH in situ indeed at first suggest that ‘covert’ movement must satisfy constraints that ‘overt’ movement does not. However, this is problematical for a derivational view of the grammar in which pre- and post-Spell-Out operations satisfy uniformity (cf. Chomsky 1995). In such a framework, Move F is the uniform characterisation of Move; the derivation from the numeration to LF is uniform. There should thus be no difference between pre- and post-Spell-Out operations, since both ‘overt’ and ‘covert’ movement involve movement of formal feature(s) (FF movement).

Boskovic & Lasnik (1998) bring the French facts in line with the uniform characterization of Move as Move F by appealing to acyclic merge (made possible by the elimination of the Extension Condition). Derivations in which a WH phrase has raised to Spec-CP, (2b) and (3b), are well-formed, because the intermediate heads Neg and C are merged acyclically.

I show that there are three problems with Boskovic’s (1998a, b) analysis and its extension found in Boskovic & Lasnik’s (1998): (a) not only do heads block WH in situ, but so do XPs and more generally elements in A’-specifier positions (focus markers, universal quantifiers, some adverbs); (b) C (a head) does not always block the licensing
of French WH in situ; (c) acyclic merger has the undesirable consequence of rejecting
the empirically well-motivated successive cyclicity of movement.

The alternative analysis that I propose is as follows: French WH phrases consist of a
question (WH) operator and a variable. In the case of single WH questions, the question
operator needs to move to Spec-CP, and has thus at least three functions: (a) to indicate
the scope of a WH phrase; (b) to provide a binder (an antecedent) for the WH phrase; (c)
to check the strong feature of C. The difference between mine and Boskovic’s (1998)
account is that I take the movement of the WH operator to be ‘overt’ (although
phonologically null) rather than ‘covert’. The restrictions on French WH in situ are
therefore not on ‘covert’ movement.

I argue that the trace left after movement of the French question operator is non-
referential. Since the variable is non-referential, it needs a local antecedent. Antecedent-
government is local, island effects are thus expected. French WH phrases in situ in single
WH questions whether they are in adjunct or object position always appear to denote
functions ranging over higher order entities. All the examples we consider involve A’-
specifiers which we independently know block antecedent government. The data are
thus similar to so-called weak islands and can thus be accounted for by Relativized
Minimality (Rizzi 1990). I argue that minimalist accounts other than Boskovic (1998),
e.g. the Minimal Link Condition (MLC), Reinhart (1998), cannot account for the French
data.

The difference between French and Chinese single WH in situ questions lies in the
morphology of their WH phrases and in the nature of the variable. Chinese WH phrases
consist of a free variable, but no operator. The (WH) operator can be base-generated
separately from its variable. Contrary to French, Chinese WH phrases in situ in object
positions are referential variables, they can be bound directly by the null operator in
Spec-CP, so antecedent-government is not required, hence the lack of intervention
effects in Chinese.

Finally, I show that partially moved WH phrases in some dialects of German are like
French WH phrases in situ in being sensitive to the intervention effect. I argue that the
WH expletive found in partial WH movement constructions leaves a non-referential
trace behind after movement to matrix CP, a trace which needs to be antecedent-
governed. The parallel between French WH in situ and partial WH movement is that the
WH operator ranges over a non-referential variable.

The paper is organised as follows: section 2 introduces the intervention effect, in
particular the restrictions on French WH in situ and partial WH movement in (some
dialects of) German. Section 3 reviews Boskovic’s (1998a, b) account of the restrictions
on French WH in situ in addition to Boskovic & Lasnik (1998) and argues against both
analyses. Section 4 introduces our alternative analysis. Finally, we summarise our main conclusions in section 5.

2 What is the intervention effect?

2.1 General characterization

Before I introduce the relevant data, consider my working definition of the intervention effect in (5a) also represented schematically in (5b):

(5) a. A WH phrase in situ (i.e. a variable) in single WH questions cannot remain in the scope of other scopal elements/operators.
   b. *[Op ... [Op ... [variable]]].

As far as I know, the term ‘intervention effect’ was originally used to describe so-called pseudo-opacity effects in French (Rizzi 1990, Swart 1992, Rullman 1995), but has recently been used more widely to describe the restrictions on WH in situ in object position or WH in intermediate position as in partial WH movement constructions in the same environment. Besides Boskovic (1998a, b) the intervention effect in the latter sense has been addressed in Ouhalla (1996) and Pesetsky (1998) for WH in situ, and Beck (1996) for partial WH movement, but it has otherwise not been widely discussed.

In the next section, I introduce data which indicate that heads are interveners. In section 2.3, I introduce data which show that XPs, and more generally elements in A’-specifiers positions, are also interveners and that intervention with heads can be reanalyzed as falling in this latter category.

2.2 Data involving heads

Boskovic (1998a) notices that WH in situ in French is blocked in matrix negative single WH in situ questions and in embedded tensed clauses, whereas ‘overt’ movement is not restricted in similar environments. (2) and (3) are repeated here for convenience (unless indicated otherwise all examples are mine):

(6) a. *Jean ne mange pas quoi?
   Jean Neg eat not what
b. Qu’i’ est-ce que Jean ne mange pas ti?
what that Jean Neg eat not
‘What doesn’t John eat?’
(Boskovic 1998a:15)

(7) a. *Jean et Pierre croient que Marie a vu qui?
Jean and Pierre believe that Marie has seen who
b. Qui i Jean et Pierre croient-ils que Marie a vu ti?
who(m) do Jean and Pierre believe-they that Marie has seen
‘Who(m) do Jean and Pierre believe that Marie saw?’
(Boskovic 1998a:13)

Boskovic (1998a, b) claims that it is Neg and C, i.e. heads, that block the licensing of WH in situ in French. The phenomenon appears to be general: a WH phrase may remain in situ in an infinitival clause provided that the verb does not select an (infinitival) C. The verb décider (‘to decide’) selects the (infinitival) complementizer de, so the in situ alternative is not possible:

(8) a. *Jean a décidé [CP de faire quoi]?
Jean has decided C to do what
b. Qu’est-ce que Jean a décidé [CP de [IP faire t]]?
what that Jean has decided C to do
‘What did Jean decide to do?’

When a verb selects no infinitival complementizer, e.g. penser (‘to think’), the licensing of WH in situ is then possible:\(^2\)

(9) a. Jean a pensé [IP faire quoi]?
Jean has thought to do what
b. Qu’est-ce que Jean a pensé [IP faire t]?
what that Jean has thought to do
‘What did Jean think of doing?’

\(^2\) Contrary to English, French allows propositional infinitivals. I assume no CP is projected in (9) (cf. Boskovic 1997).
2.3 Data involving XPs

Not only heads block the licensing of WH in situ in French, but so do XPs. Universal quantifiers (XPs) either in subject or object position block the licensing of WH in situ. Whereas in (10b) and (11b) either the WH phrase or the universal quantifier can take wide scope, the WH phrase cannot take wide scope in (10a) and (11a), suggesting the universal quantifier is an intervener:  

(10) a. Tout le monde aime quoi?  
   all the people likes what  
   * ‘for which thing (x), everybody likes that thing (x).’  
   ? ‘for which pair <x, y>, everybody (x) likes (y).’

b. Qu’est-ce que tout le monde aime t’?  
   what that all the people like  
   ‘for which thing (x), everybody likes that thing (x).’  
   ‘for which pair <x, y>, everybody (x) likes (y).’  
   ‘What does everybody like?’

(11) a. Jean donne tous les restes à qui?  
   Jean gives all the leftovers to whom  
   * ‘for which person (x), Jean gave all the leftovers to that person (x).’  
   ? ‘for which pair <x, y>, Jean gave (x) to (y).’

b. À qui Jean donne tous les restes à t’?  
   to whom Jean gives all the leftovers  
   ‘for which person (x), Jean gave all the leftovers to that person (x).’  
   ‘for which pair <x, y>, Jean gave (x) to (y).’  
   ‘To whom does Jean give all the leftovers?’

More generally it appears that it is elements appearing in A’-specifiers which block the licensing of WH in situ in French. Focus markers such as seulement (‘only’) and même (‘even’), which I take to be operators sitting in A’-specifiers, create intervention effects:

(12) a. *Seulement JEAN arrive à faire quoi?  
   only Jean arrives to do what

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3 (10a) is not so good either on the pair list reading, which is an independent problem.
Mathieu

b. Qu’est-ce que seulement JEAN arrive à faire t₁?
   'What does only JEAN manage to do?'

(13) a. *Même JEAN arrive à faire quoi?
   even Jean arrives to do what
b. Qu’est-ce que même JEAN arrive à faire t₁?
   'What does even JEAN manage to do?'

Operators like seulement and même should be able to be associated with Jean in (12a) and (13a), since the only condition for their ability to focus is that they must be associated with a lexical (not a trace) constituent in their c-command domain, Principle of Lexical Association (PLA) -Tancredi 1990 -, a principle to which we return in detail in section 4.1.

In addition, adverbs such as souvent (‘often’) and toujours (‘always’), standardly claimed to sit in A’-positions, block the licensing of WH in situ in French:

(14) a. *Il fait toujours quoi le dimanche?
   he does always what the Sunday
b. Qu’est-ce qu’il fait toujours t₁ le dimanche?
   'What does he always do on Sundays?'

(15) a. *Il fait souvent quoi le dimanche?
   he does often what the Sunday
b. Qu’est-ce qu’il fait souvent t₁ le dimanche?
   'What does he often do on Sundays?'

We can bring sentential negation, example (6), in line with the above examples by suggesting that it is negative XPs, or their non-overt equivalent as in French, rather than negative heads that block the licensing of French WH in situ.

The constraints on French WH in situ are similar to the constraints on partial WH movement constructions in some dialects of German (cf. Beck 1996). In these dialects there is a choice between raising a standard WH phrase to Spec-CP or merging the non-
contentive WH word was (‘what’, glossed below as WH) in Spec-CP and leaving the contentive WH phrase in an intermediate A’-position.\(^4\)

\[(16)\] a. Was glaubt Uta wen Karl gesehen hat?
WH believes Uta whom Karl seen has
b. Wen\(_i\) glaubt Uta dass Karl t\(_i\) gesehen hat?
Whom believes Uta that Karl seen has

‘Who does Uta believe that Karl saw?’ WH = non-contentive WH phrase

Negation blocks the licensing of the partially moved contentive WH phrase\(^5\):

\[(17)\] a. *Was glaubst du nicht mit wem Hans gesprochen hat?
WH believe you not with whom Hans spoken has
b. Mit wem\(_i\) glaubst du nicht dass Hans t\(_i\)
With whom believe you not that Hans

gesprochen hat?
spoken has

‘Who don’t you believe that Hans has spoken to?’

(Rizzi 1991, in Beck 1996:3)

\(^4\) According to Beck (1996), the intervention effect is an island condition on traces formed by covert movement of the semantic restriction to its quantifier. In Beck’s (1996) formulation ‘Quantified-Induced Barriers’ (QUIBS) cannot be crossed by traces that are created at LF:

(i) Quantification-Induced Barrier (QUIB)
The first node that dominates a quantifier, its restriction, and its nuclear scope is a Quantifier-Induced Barrier.

(ii) Minimal Quantified Structure Constraint
If an LF trace \(\beta\) is dominated by a QUIB \(\alpha\), then the binder of \(\beta\) must also be dominated by \(\alpha\).

(\text{Beck 1996:39})

The problem with Beck’s account is that the intervention effect is claimed to be a condition on LF movement. This is problematic in the MP (uniformity). Also, she assumes that the semantic restriction of WH phrases moves up to its quantifier in partial WH movement constructions when there is evidence that the WH phrase is already licensed in the intermediate A’-position. See 4.3 for more details.

\(^5\) Misi Brody (p.c.) informs me that negation and other scope-bearing elements (in post-verbal positions) also block the licensing of the contentive WH phrase in partial WH movement constructions in Hungarian.
The contentive WH phrase cannot remain in an embedded tensed clause; it must raise to a particular Spec-CP, not the specifier of just any lower CP. Insertion of another non-contentive WH element in intermediate positions renders the sentence grammatical. It is the relation between a contentive WH phrase and a non-contentive WH element that exhibits the intervention effect:

(18) a. *Was glaubst du [CP dass Hans meint [CP mit wem Jakob ti gesprochen hat]]?  
   WH believe you that Hans thinks with whom Jakob spoken has  
   ‘With whom do you believe that Hans thinks that Jakob spoke?’  
   (Simpson 1995:106)

The following example confirms that it is negative XPs rather than negative heads which are interveners. Niemand (‘nobody’) is an XP:

(19) a. *Was glaubt niemand wen Karl gesehen hat?  
   WH believes nobody whom Karl seen has  
   ‘Who does nobody believe that Karl saw?’  
   (Beck 1996:3 and 5 respectively)

In (20), where the universal quantifier is an intervener, the contentive WH phrase in the intermediate A’-position cannot take wide scope. The pair-list reading is however possible (contrary to French, see footnote 3):

(20) a. Was glaubt jeder wen Karl gesehen hat?  
   WH believes everyone whom Karl seen has
In the next section, I introduce and argue against Boskovic’s (1998a, b) analysis on the grounds that it is not heads that block the licensing of WH in situ in French and partially moved WH in German, but A’-specifiers. In addition, I will show that a C head does not always block the licensing of French WH in situ. Finally, against Boskovic & Lasnik (1998), I will claim acyclic merge is problematic.

3 FF analysis + acyclic merge: Boskovic (1998a, b) and Boskovic & Lasnik (1998)

3.1 Presentation

Boskovic (1998a, b) accounts for the optionality of WH movement in French by allowing strong features to be inserted after Spell-Out. In this system, Procrastinate, which disfavours ‘overt’ movement, has been eliminated. In the case of the optionality of movement in French WH interrogatives strength is kept constant. Strong features can be inserted after Spell-Out as long as it is at the root and that the element inserted is phonologically null. When an overt WH complementizer is inserted pre-Spell-Out, ‘overt’ movement occurs, and when a phonologically null WH complementizer is inserted post-Spell-Out ‘covert’ movement takes place. There is no need to assume that the +WH feature of French C is sometimes weak, sometimes strong.6

Boskovic assumes Chomsky’s (1995) framework in which Move F is the basic uniform characterization of Move. ‘Overt’ movement is movement of formal features (FF) + pied-piping of the whole category (generalized pied-piping), and ‘covert’ movement is movement of FF alone.

On Boskovic’s view the intervention effect observed in French is on FF movement. From this perspective, the licensing of WH in situ in French is different from the licensing of WH in situ in languages like Chinese and Japanese. He argues that those languages have an alternative system, i.e. movement of a phonologically null operator (cf. Watanabe 1993, Aoun & Li 1993) on the grounds that WH in situ is not subject to the intervention effect (the movement of the null operator is XP movement).

6 There are many problems with Boskovic’s (1998a, b) analysis with regard to the optionality of WH movement in French, but for reasons of space I cannot discuss these here.
In minimalist terms, the Neg head in (6a) blocks raising of the formal features of the WH phrase (FF\textsubscript{wh}) whereas generalized pied-piping results in a well-formed derivation (6b). Similarly, the C head ‘que’ (‘that’) blocks raising of FF\textsubscript{wh} in (7a), whereas generalized pied-piping results in a well-formed derivation (7b). Boskovic (1998a, b) argues that it is the C head que (‘that’), which is an intervener, in view of the fact that a WH phrase in situ can be licensed properly across Tense:

\begin{enumerate}
\item[(21)] a. Jean a dit quoi?
    Jean has said what
\item b. Qui est-ce que Jean a dit t?
    what that Jean has said
    ‘What did Jean say?’
\end{enumerate}

(22) is taken as evidence that LF movement is responsible for the ungrammaticality observed in (6) and (7):

\begin{enumerate}
\item[(22)] a. Qui\textsubscript{1} ne mange pas quoi?
    who NEG eat not what
    ‘Who doesn’t eat what?’
\item b. Qui\textsubscript{1} croit que Marie a vu qui\textsubscript{2}?
    who believes that Marie has seen who
    ‘Who believes that Marie has seen who?’
\end{enumerate}

(Boskovic 1998b:4)

According to Boskovic, (22a and b) are acceptable as standard questions with a pair-list reading, the reading in which an item \(x\) is paired-up with an entity \(y\) (a possible answer to 22a is ‘Jean doesn’t eat chocolate, Mary doesn’t eat meat, Kathy doesn’t eat bread...’). He argues that no FF\textsubscript{wh} movement from the interrogative in situ is necessary in (22a and b), as opposed to (6b) and (7b), since in (22a and b) the +WH feature of C has been checked by the +WH feature of the first/highest interrogative qui\textsubscript{1}. For quoi and qui\textsubscript{2}, unselective binding suffices. On this view, unselective binding is not an option for the WH phrase in situ in matrix single WH questions, because it would leave the +WH feature of C unchecked. In sum, WH phrases sometimes move (namely if necessary for convergence) and sometimes do not (namely if convergence does not require it).

The fact that Neg and C are interveners for FF movement is taken as support for Chomsky’s (1995) intuition that covert movement is an instance of head movement. The technical details are as follows: relativizing the notion of heads (following Roberts 1993), FF\textsubscript{wh}, an ‘A’-head-like object’, is not able to cross another A’-head, namely Neg.
or C. Verbs because they are A-heads do not interfere with FF\textsubscript{wh}. This would follow from an appropriate version of the Head Movement Constraint (HMC). Finally, because overt movement is XP movement, the category chain is necessary in addition to the feature checking chain, Neg and C, two heads, will not interfere.

In short, the French facts lead Boskovic (1998a, b) to reject Chomsky’s (1995) uniform characterization of Move as Move F, which reduces all checking configurations to the FF-head relation. The observation that covert movement is more restricted than overt movement, if correct, is indeed, problematic for the MP, since there should be no difference between ‘overt’ and ‘covert’ movement: minimalist assumptions demand that uniformity hold. Whenever we have ‘overt’ movement, the raising of FF is also taking place.

Boskovic & Lasnik (1998) put forward an approach to the cycle which eliminates the challenge posed by the French data to the uniform characterization of Move as Move F. Their proposal involves the elimination of the extension condition, which requires that both Merge and Move take place at the root only. Thus this condition rules out acyclic movement (Chomsky 1995: 248, 254). Boskovic & Lasnik argue that the extension condition can be dispensed with on the grounds that many of its effects fall out from the notion of feature strength.

In particular, the introduction in a phrase marker of a strong feature triggers an operation which leads to its immediate elimination:

\begin{equation}
\text{(23) Suppose that the derivation } D \text{ has formed } \Sigma \text{ containing } \alpha \text{ with a strong feature F. Then } D \text{ is cancelled if } \alpha \text{ is in a category not headed by } \alpha.
\end{equation}

(Chomsky 1995:324).

Consequently, strong features take care of some cyclicity effects. One of the overlaps between strength and the extension condition can be seen in super-raising and WH islands. Both the extension condition and (23) are violated if the intervening specifier (\textit{whether} and \textit{it}) are inserted acyclically as in (24):

\begin{enumerate}
  \item a. ??Who\textsubscript{i} do you wonder whether John likes ti?
  \item b. *John\textsubscript{i} seems it was told ti that Peter likes Mary.
\end{enumerate}

(Boskovic & Lasnik 1998:1)

Boskovic & Lasnik (1998) propose to eliminate the extension condition because its redundant aspects are conceptually problematic. This leaves the cycle solely defined in terms of the definition of feature strength. One consequence of this analysis is that acyclic merger of elements with weak features becomes a possibility:
(25) **Acyclic Merge**

Acyclic merger of an element E is in principle possible if E contains no strong features.

The challenge to the uniform characterization of Move as Move F can now be eliminated by appealing to acyclic merger. Because the heads Neg and C are phonologically realized, they must enter the structure before LF. However, they do not necessarily have to be present when ‘overt’ movement takes place. Thus (6b) can be saved from ungrammaticality by allowing Neg - assumed to have a weak feature - to be merged acyclically; that is after the WH phrase has raised to Spec-CP to check the strong feature of C.

Similarly, the intermediate CP in (7b) - with a weak feature - is inserted acyclically after the WH phrase has checked the +WH feature of root C. In the next section, I discuss several problems raised by Boskovic’s (1998a, b) and Boskovic & Lasnik’s (1998) analyses.

### 3.2 Problems with Boskovic’s (1998a, b) and Boskovic & Lasnik’s (1998) analyses

Boskovic’s (1998a, b) and Boskovic & Lasnik (1998) analyses have several problems: the first and main problem is that not only heads block the licensing of WH in French, but so do XPs, and more generally A’-specifiers, as we have seen in section 2.3. The data therefore suggest that the restrictions on French WH in situ are not constraints on head (FF) movement. It appears that scopal elements in general block the licensing of WH in situ, and that it is A’-specifiers which are at stake. This indicates that the challenge to the uniform characterization of Move as Move F does not arise in the first place and that the appeal to acyclic merger is therefore not needed.

Note that appealing to acyclic merge in the case of the C head means that WH movement occurs in one step, without movement to intermediate Spec-CPs. This is problematic, since it has the undesirable consequence of rejecting the empirically well-motivated successive cyclicity of WH movement (Rizzi 1990 for French McCloskey 1979 for Irish; du Plessis 1977 for Afrikaans). (26) is a French example:

(26) Qui_ Jean a dit qui ti était arrivé?  
who Jean has said that-AGR was arrived  
‘Who did Jean say arrived?’

(the complementizer que undergoes agreement in C)
The third problem is that there appear to be cases where a C head does not block the licensing of WH in situ in French:

(27) a. Pierre ne veut pas que Marie fasse quoi?

b. Qu’est-ce que Pierre ne veut pas que Marie fasse ?

‘What doesn’t Pierre want Marie to do?’

The subjunctive is usually considered a tense dependent on that of the higher clause (cf. Simpson 1995:273) and the grammaticality of (27a) may stem from this fact. Assuming that the subjunctive is indeed dependent on the tense of the matrix clause, the embedded clause is thus transparent for the remote licensing of the WH phrase in situ. If this is correct, then what appears relevant for the licensing of French WH in situ in embedded clauses is tense (contrary to what Boskovic 1998a, b claims), more precisely whether the tense is dependent or independent on the tense of the higher clause.

A similar analysis can be applied to the contrast between (8) and (9). Verbs of perception, e.g. voir (‘see’), propositional verbs, e.g. penser (‘think’) when used without a finite complementizer, causatives, e.g. faire faire (‘make someone do something’), and permissives, e.g. laisser (‘let’), have their complement verbs dependent on the matrix clause (no intermediate CP is projected). The tense of a simplex sentence anchors the aspectual reference of the event to the time of the utterance (cf. Stowell 1982). Hence the lack of intervention effects when those particular verbs are involved. We return to tense in detail in section 4.1.

Let me now summarise and conclude the present section: Boskovic’s (1998a, b) account has a serious problem: not only heads block the licensing of WH in situ, but so do XPs and more generally elements appearing in A’-specifiers. In addition, I have shown that C does not always block the licensing of French WH in situ. These facts led me to conclude that the restrictions on WH in situ do not stem from a putative restriction on head (FF) movement. The appeal to acyclic merger (problematic in the first place) to bring the French facts in line with the uniform characterization of Move as Move F is not required. In the next section, I propose an alternative analysis.
4 Alternative analysis

4.1 WH in situ in single versus multiple WH questions

One of Boskovic’s (1998a,b) assumption appears to be correct. WH phrases in situ move in single WH questions, but not in multiple WH questions. In his words, WH phrases in situ sometimes move at LF (when required by convergence), sometimes do not (when convergence does not require it).²

Evidence that WH phrases in situ in single WH questions involves some kind of movement comes from the fact that WH in situ questions, like their ‘overt’ movement counterparts, are subject to weak crossover effects. Since the variable in (28a) is coindexed with a pronoun on its left, the derivations are ruled out (cf. the Leftness Condition). The variable left by movement of the WH phrase at LF is also subject to the Leftness Condition:

\[(28)\]
\[
a. *Qu_i \text{ sa}_i \text{ mère a vu t}_i ?
\]
\[
\text{who his mother has seen}
\]
\[
b. *Sa_i \text{ mère a vu qui}_i ?
\]
\[
\text{his mother has seen who}
\]
\[
\text{‘*Who\(_i\) did his\(_i\) mother see t\(_i\)’?}
\]

Secondly, the data we considered in section 2 indicate that there must be some kind of movement involved with French WH phrases in situ in single WH interrogatives. The violation in examples (6) and (7) for instance is stronger than a subjacency violation, indicating that we are faced with an ECP violation.

On the other hand, WH phrases in situ in multiple questions do not appear to move. A moved WH phrase in single WH questions is subject to subjacency (movement is necessary in this case in order to check the strong +WH feature of C), whereas WH in situ in multiple WH questions is not:

\[(29)\]
\[
a. *Qu_i \text{ est-ce que tu te demandes qui a vu t}_i ?
\]
\[
\text{what that you yourself ask who has seen}
\]
\[
\text{‘What do you wonder who saw?’}
\]

² Ackema & Neeleman (1998) make exactly the same claim.
b. Qui$_1$ se demande qui$_2$ a vu quoi?
who himself asks who has seen what
‘Who wonders who saw what?’

Since subjacency must be assumed to hold at LF in the MP (pre- and post-Spell-Out operations satisfy uniformity), the fact that WH phrases in situ do not show subjacency effects in multiple WH questions indicates that those phrases do not move at LF.$^8$

Further evidence for the no movement hypothesis comes from the behaviour of the focus marker only/seulement. $^9$ What follows relies on Aoun & Li’s (1993) well-known analysis. An operator such as seulement must be associated with a lexical element in its c-command domain. The sentence in (30) is ambiguous and receives two interpretations. On one reading the quantificational force of seulement is associated with le livre (‘the book’) (‘it is only the book that he liked, he didn’t like the film version of the book’); on the other reading, seulement restricts the verb aimer (‘like’) (‘he did not love the book, he only liked it’):

(30) Il a seulement aimé le livre.
he has only liked the book
‘He only liked the book.’
(i) Il a seulement AIMÉ le livre.
interpretation: he didn’t love it.
(ii) Il a seulement aimé LE LIVRE.
interpretation: he didn’t like the film.

The postverbal nominal expression modified by seulement cannot be topicalised or undergo WH movement without cancelling one of the two readings otherwise available, as (31) and (32) show. The first reading is not available:

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$^8$ There is indeed empirical evidence that subjacency does hold at LF: comparatives and other elliptic constructions yield subjacency effects, the associate - the nominal expression - moving up to the conjunction (cf. Reinhart 1998:34).

$^9$ A similar analysis could be constructed with même (‘even’).
(31) Le livre, il l’a seulement aimé.
the book he it has only liked
‘The book, he only liked.’
(i) Le livre, il l’a seulement AIMÉ.
interpretation: he didn’t love it.
(ii) *LE LIVRE, il l’a seulement aimé.
intended: he didn’t like the film (interpretation not available).

(32) Qui est-ce qu’il a seulement aimé?
what that he has only liked
‘What did only liked?’
(i) Qui est-ce qu’il a seulement AIMÉ?
interpretation: he didn’t love the book, he only liked it.
(ii) *QUI EST-CE QU’il a seulement aimé?
intended: he didn’t like the film (interpretation not available).

The conclusion is that an operator like seulement must be associated with a lexical (not a trace) constituent in its c-command domain (Principle of Lexical Association, Tancredi 1990). If we now consider WH in situ, we note that sentences in which a WH phrase is associated with seulement are acceptable, suggesting that the WH phrase has remained in situ (satisfying the PLA) or that the PLA simply does not apply at LF:

(33) a. Qui a seulement AIMÉ quoi?
b. Who only LIKED what?

(34) a. Qui a seulement aimé QUOI?
b. Who only liked WHAT?

There is empirical evidence that the PLA does apply at LF (which under minimalism is a requirement anyway). (35) is ambiguous, either quelqu’un (‘someone’) can take tous les garçons (‘every boy’) in its scope or tous les garçons can take quelqu’un in its scope:
Quelqu’un a aimé tous les garçons.

Someone has liked all the boys

‘Someone liked every boy.’

a. \[[IP quelqu’un \ [IP tous les garçons \ [IP t_i \ [VP V aimé t_j]]]]\].

‘there is an (x) such that every boy likes that (x).’

b. \[[IP tous les garçons \ [IP quelqu’un \ [IP t_i \ [VP V aimé t_j]]]]\].

‘there is a pair <x,y> such that (x) likes (y).’

In (36), *seulement* can be associated with *tous les garçons*, suggesting the universal quantifier has remained in the c-command domain of *seulement*. Indeed we find that (36) is not ambiguous, it can only receives the reading in which *quelqu’un* takes wide scope, the presence of the focus operator blocking raising of the quantifier:

Quelqu’un a seulement aimé TOUS LES GARÇONS.

Someone has only liked all the boys

‘Someone only liked EVERY BOY, i.e. not the girls.’

a. \[[IP quelqu’un \ [IP tous les garçons \ [IP t_i \ [VP V aimé t_j]]]]\].

‘there is an (x) such that every boy likes that (x).’

b. \[*[IP tous les garçons \ [IP quelqu’un \ [IP t_i \ [VP V aimé t_j]]]]\].

‘*there is a pair <x,y> such that (x) likes (y).’

WH phrases in situ can, on the other hand, have wide scope regardless of whether *seulement* is present or not, as (34) shows, suggesting that WH phrases in situ in multiple WH questions do not move at LF. If they did they would violate the PLA, and the reading in which *quoi/what* takes wide scope would not be available.

The Chinese example (37) is grammatical suggesting that Chinese WH phrases in situ may not in some cases move even in single WH questions. The French equivalent is ill-formed suggesting that WH phrases in situ in single WH questions do indeed move (see also examples 12 and 13):

(37) a. Ta zhi XIHUAN shéi?

he only like who

(Aoun & Li 1993:207)

b. *Il a seulement AIMÉ qui?

he has only liked who

‘Which person (x) he only liked that (x)? i.e. he didn’t love (x)’
To sum-up: first, argument WH phrases in situ in single WH questions involve movement in French, but not in Chinese. The question is why? This is the topic of the next section. Secondly, WH phrases in situ in multiple WH questions do not appear to involve movement. How are these WH phrases licensed? Again I discuss this further in the next section.

4.2 French versus Chinese WH phrases in situ

First, a distinction between WH phrases in Chinese and French needs to be made in terms of morphology. As is well-known, WH phrases in Chinese consist of a variable, but no operator. In Chinese WH phrases in situ are like polarity items in that they need an antecedent to be licensed. Chinese WH phrases are words assigned different interpretations by other operators. In French, WH phrases cannot receive interpretations other than WH, indicating that WH phrases are not pure variables in that language. WH phrases in French consist of variable and a question (WH) operator.

Following Aoun & Li (1993), I assume that Chinese argument WH phrases in situ in single WH questions do not move but are instead coindexed and interpreted with respect to a phonologically null question operator, which is base-generated in Spec-CP. The question operator has a least three functions:

(38) (a) to indicate the scope of a WH phrase;
    (b) to provide a binder (an antecedent) for the WH phrase;
    (c) to check the strong feature of C. WH phrases remain in situ and are variables rather than operators.

If we assume the question operator may be moved in the syntax (it may not always be base-generated in Spec-CP), the distribution of the operator is expected to be sensitive to the various constraints that regulate ‘overt’ extraction processes, e.g. the ECP and subjacency. In Chinese, argument WH phrases are licensed by the null operator which is in this case base-generated in Spec-CP, whereas adjunct WH phrases are licensed by the same operator which is this time base-generated in the minimal domain in which the WH phrase occurs.

To illustrate: the ungrammaticality of Chinese (40b) suggests that in the case of the adjunct WH phrase the null operator is base-generated in the minimal clause in which the WH phrase occurs and that movement of the operator leaves a non-referential variable behind. It is subject to the same condition as overtly moved adjunct WH phrases.
(40b), i.e. the ECP, which accounts for the well-known asymmetry between arguments and adjuncts with regard to extraction from islands.\(^{10}\)

(39) a. *What do you wonder how to fix \(t_i\)?
   b. How do you wonder how to fix the car \(t_i\)?

(40) a. \([\text{CP}_1 \text{Ta xiang-zhidao [CP}_2 \text{shei maile shenme]}] \text{ he wonder who bought what}
   ‘What does he wonder who bought.’
   ‘Who does he wonder bought what?’
   ‘He wonders who bought what.’

b. \([\text{CP}_1 \text{Ta xiang-zhidao [CP}_2 \text{shei weishenme likaile]}] \text{ he wonder who why left}
   ‘Who does he wonder left why?’
   ‘Why does he wonder who left?’
   ‘He wonders who bought what.’

(Aoun & Li 1993:218)

In French, the WH operator cannot be separated from its variable. If a WH phrase is in situ, the operator needs to move to Spec-CP for the reasons indicated in (38). The movement is not ‘covert’, but ‘overt’ (although phonologically null), like in the case of the Chinese null operator movement in (40b).\(^{11}\) Movement of this WH operator occurs with WH phrases in adjunct and object position. Since I take the movement of the WH operator to be ‘overt’, my analysis therefore brings French in line with other WH in situ languages like Chinese, Japanese and Korean (Cheng 1991, Watanabe 1993, Aoun & Li 1993, Tsai 1994), languages which have been analysed as having a null operator in single WH interrogatives. In French, like in Chinese in some cases (see below for more details), there is ‘overt’ movement of a phonologically null question (WH) operator. No separate mechanism is required pace Boskovic (1998a, b), see section 3.1.

I follow Rizzi’s (1990) version of the ECP and his Relativized Minimality, a theory in which the distinction between arguments and adjuncts is not simply a matter of position in a phrase marker, but of variable types. The French data we have considered adds support to the claim that the variable type, i.e. interpretation of the trace, needs to be

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\(^{10}\) The third reading ‘he wonders who bought what/*why’ does not concern us here.

\(^{11}\) In minimalist terms, it is pre-Spell-Out FF movement, which, I think, is basically made possible by minimalist theories.
taken into account. For example, although *quoi* (‘what’) in (6) is in object position (governed position), it requires antecedent government. This in turn suggests that the interpretation of the variable is crucial.

According to Rizzi (1990), there are two kinds of variables: referential and non-referential. Variables which are referential can be connected to their operators by binding, a relation unaffected by island barriers:

(41) **Binding**  
    \[X \text{ binds } Y \text{ iff:} \]
    \[(i) \ X \text{ c-commands } Y;\]
    \[(ii) \ X \text{ and } Y \text{ are coindexed.}\]

(Rizzi 1990:87)

Variables which are non-referential cannot be connected to their operators by binding, instead they are connected to their operators by antecedent-government, a local relation:

(42) X antecedent-governs Y iff:  
    \[(i) \ X \text{ and } Y \text{ are non-distinct;}\]
    \[(ii) \ X \text{ c-commands } Y;\]
    \[(iii) \text{no barrier intervenes;}\]
    \[(iv) \text{Relativized Minimality is respected.}\]

(Rizzi 1990:92)

What counts as an intervener for antecedent-government with regard to WH movement is as follows:

(43) A filled A’-position specifier \(\alpha\) blocks antecedent-government between an A’-position \(\beta\) that c-commands \(\alpha\) and an adjunct trace that \(\alpha\) c-commands.

Expressions may or may not be referential. Referential expressions refer to participants in the event described by the verb (John, apples, books, etc.), whereas non-referential expressions do not refer to participants: instead they qualify the event, or involve compositionality (measure, manner, etc.) or idiom chunks (Rizzi 1990). All arguments receive a theta-role but differs as to whether the theta-role is referential or not.\(^{12}\) **Who**

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\(^{12}\) Originally, expressions were said to either have a referential index or not. I have avoided this terminology since indices in the grammar are not tolerated (minimalism). The original proposal can easily be translated into one in which the distinction between referential and non-referential theta roles is
and *what* are usually operators whose variable is referential. *How* and *when* are operators whose variable is non-referential. *Where* and *when* are like argument WH phrases in being referential, they can appear in situ. To sum-up, a distinction is made between arguments and referential adjuncts on the one hand and non-referential adjuncts on the other hand.

To recapitulate, my basic argument is as follows: French WH phrases consist of a variable and an operator, which needs to move to Spec-CP. The trace left by the operator is a non-referential variable. Island effects are thus always expected, since this variable needs a local antecedent. I will assume that in French the null operator is base-generated in Spec-DP of the WH phrase in situ.

As already mentioned, French WH phrases are very different from Chinese WH phrases. These contain a free referential variable, but no operator. WH phrases in situ like *shenme* (‘what’) are referential. Contrary to what we find in French, they can therefore be bound by the null operator which is in this case base-generated in Spec-CP (naturally for adjunct WH phrases the null operator is base-generated in the minimal clause in which the WH phrase in situ appears). Contrary to French, Chinese WH in situ is therefore not blocked by negation and other scopal elements (37 is repeated here as 46):

(44) a. Yanhan bu xiquan shenme?\(^{13}\) (Chinese)

   John Neg like what

b. *Jean n’ aime pas quoi? (French)

   Jean Neg like not what

   ‘What doesn't John like?’

---

\(^{13}\) Thanks to Anson Yuet Wai Wong for these data.
Let us go through each example in detail. (44b) appears to be a case of so-called inner island. The non-overt operator is base-generated in Spec-CP in Chinese (48a), it binds the variable in situ, no island effects are expected. In French, the trace of the operator in \([DP_t \_quoi_i]\) is non-referential, therefore it needs a local antecedent, and island effects are expected:

\[
\begin{align*}
(48)\ a. \quad & \text{[CP Op}_{i} \text{[IP Yanhan Yanhan} \text{[NegP Neg bu [VP V xiquan like} \\
& \text{shenme}_{i}]]])? \\
& \text{what} \\
\text{b. \quad } & \text{[CP Op}_{i} \text{[IP Jean n}_{k'} \text{aime}_{j} \text{[NegP pas Neg t}_{k} \text{[VP V t}_{j} \\
& \text{Jean Neg like not} \\
& \text{[DP t}_{i} \_ quoi}_{i}]]])? \\
& \text{what} \\
& \text{‘What doesn’t Jean like?’}
\end{align*}
\]
(45b) can receive an analysis along the lines of so-called pseudo-opacity (cf. Rizzi 1990). French allows certain quantifiers to quantify ‘at a distance’, *beaucoup* (‘many’) may be base-generated next to the direct object or may be adjoined to VP (cf. Obenauer 1976, 1984, Rizzi 1990):

(49) a. Jean a [VP V lu beaucoup de livres].
   Jean has read many of books
b. Jean a [VP beaucoup [VP V lu de livres]].
   Jean has many read of books
‘Jean has read many books.’

Similarly, the WH phrase *combien* (‘how many’) may either remain next to the direct object or be moved on its own:

(50) a. [CP Combien de livres a-t-il lu t_i]? how many of books has he read
b. [CP Combien a-t-il lu de livres t_i]?
   how many has he read of books
‘How many books has he read?’

*Combien de livres* (‘how many books’) binds a referential variable, whereas *combien* on its own leaves a non-referential trace behind which needs a local antecedent. If we assume the quantifier *beaucoup* to occupy an A’-position (the quantifier has adjoined to VP or IP), we expect that the quantifier *beaucoup* to block extraction in (51b):

(51) a. [CP Combien de livres a-t-il beaucoup V lu t_i]]? how many of books has he a lot read
b. *[CP Combien a-t-il beaucoup V lu de livres t_i]]? how many has he a lot read of books
‘How many books did he read a lot?’

In addition, (52b), unlike (52a) is not ambiguous; it only yields the reading in which the universal quantifier takes wide scope, the sentence asking for everyone, how many books they have read. The universal quantifier acts as an intervener like in the French WH in situ examples we considered above:

(52) a. [CP Combien de livres ont-ils tous V lu t_i]]? how many of books have they all read
In (53b), assuming the quantifier tout le monde (‘everybody’) has moved and adjoined to IP as is traditionally thought to be the case for quantifiers, the quantifier will occupy an A’-position which will block the licensing of the WH phrase in situ. Compare the respective structure for Chinese and French:

(53) a. [CP Op$_i$ [IP meigeren$_j$ [IP t$_j$ everyone [VP V kandaole all saw]]]? [shenme dongxi$_i$]]? ‘What thing everyone saw’

b. *[CP Op$_i$ [IP tout le monde$_k$ [IP t$_k$ all the world has seen]]]? [DP t$_i$ quoi$_i$]]? ‘What has everyone seen?’

If we assume seulement (‘only’) in (46b) to be adjoined to IP thus occupying an A’-position, island effects are expected:

(54) a. [CP Op$_i$ [IP ta I [VP zhi [VP XIHUAN shei$_i$]]]? [he only like who]]? ‘Who does/did he only LIKE?’

b. *[CP Op$_i$ [IP il I a [VP seulement [VP AÏMÉ [DP t$_i$ he has only liked]]]? [qui$_i$]]]? ‘Whom does/did he only LIKE?’

Similarly, adverbs such as souvent (‘often’) and toujours (‘always’) are traditionally taken to be adjoined to VP, hence they are in an A’-position, giving rise to the same effect:
Finally with regard to tense, I suggest that, if we assume it to be an operator, occupying an A’-specifier, then we expect it to create an intervention effect in French. Recall that there is a difference between tenses in embedded clauses which are dependent on that of the matrix clause and those that are not. WH in situ in French is allowed in the former, but not in the latter. I suggest that tense which is dependent on that of the higher clause is not an operator. Instead, it may be considered akin to a variable dependent on the tense of the higher clause. In other words, the tense which is dependent on that of the higher clause is absorbed and forms a unary operator with that of the higher clause.\(^\text{14}\) I assume the tense operator is located in TP:

(55) \[^{[\text{CP Op}_1 [\text{IP}_1 \text{I fait}_j [\text{VP} \text{souvent/toujours [VP V t}_j \text{he does often/always [DP t}_i \text{D quoi}_i \text{le dimanche}]}}}]]? \]

‘What does he often/always do on Sundays?’

(56) a. \[^{[\text{CP Op}_1 [\text{IP}_1 \text{ta renwei [CP}_2 \text{C ni I [VP maile shenme}_i]]}]?? \]

he think you bought what

b. *[^{[\text{CP Op}_1 [\text{IP}_1 \text{il pense [CP}_2 \text{C que [IP}_2 \text{Op tu I as acheté [DP t}_i \text{quoi}_i]]}]?? \]

he thinks that you have bought what

‘What did he think you bought?’

(57) a. \[^{[\text{CP Op}_1 [\text{IP}_1 \text{Jean pense}_k [\text{IP}_2 \text{I faire}_k [\text{DP t}_i \text{quoi}]][]]}? \]

Jean thinks to do what

‘What is Jean thinking of doing?’

b. \[^{[\text{CP Op}_1 [\text{IP}_1 \text{Pierre ne veut pas [CP}_2 \text{que [IP}_2 \text{Marie fasse [DP t}_i \text{quoi}_i]]}]?? \]

Pierre Neg wants not what does-SUBJ

‘What doesn’t Pierre want Marie to do?’

\(^{14}\) The rule of absorption turns a string of unary operators into a single n-ary operator: \([Qx, Qy, \ldots] \rightarrow [Q <x, y, \ldots>]\). Each unary operator ranges over individuals, but an n-ary operator ranges over ordered pairs (cf. Higginbotham & May 1981).
As for WH in situ in multiple WH questions, recall that the highest/first WH phrase binds the WH phrase in situ, which is in this case a pure variable. No movement of an operator is therefore necessary when WH phrases in situ in object position are involved. The variable may thus well be referential.

Note at this point that all the cases we have considered are similar to so-called weak-islands effects. Weak islands show an asymmetry between arguments and adjuncts: arguments and non-referential adjuncts, but adjuncts can be extracted from weak islands:

(58) a. ?What \(_i\) do you wonder how to fix \(t_i\)?
   b. *How \(_i\) do you wonder what to fix \(t_i\)?

(59) a. ?What \(_i\) don’t you know how to fix \(t_i\)?
   b. *How \(_i\) don’t you know what to fix \(t_i\)?

(60) a. ?What \(_i\) does only JEAN manage to repair \(t_i\)?
   b. *How \(_i\) does only JEAN manage to repair the fridge \(t_i\)?

(61) a. ?What do you wonder how to fix \(t_i\)?
   b. *What do you wonder how he should fix \(t_i\)?

We also know independently that so-called pair-list interpreted variables, like adjunct traces, cannot occur within islands (cf. Szabolcsi & Zwarts 1992-1993):

(62) a. Which woman \(_i\) does no man love \(t_i\)?
   (i) Mary.
   (ii) His mother.
   (iii) *John loves Mary, Bill loves Mary...
   (Swart 1998:111)
   b. What \(_i\) do you wonder whether everyone brought \(t_i\)?
   (Hornstein 1995:116)

Two answers are possible to the question in (62a), the so-called individual answer, in which no man loves the same woman (i), and the so-called functional answer, in which no man loves his (own) mother (ii). A third logical reading, the pair-list reading (iii), in
which negation takes scope over the WH phrase is not available, because the variable ranges over a non-individual.\textsuperscript{15} Negation blocks antecedent-government.

In (62b), the intermediate WH phrase blocks antecedent-government. Although the individual-reading is available (everyone brought the same thing), the pair-list reading is not (everybody brought a different thing).

To sum-up: WH phrases like \textit{quoi} (‘quoi’) and \textit{qui} (‘who’) when in situ in French single WH questions are non-referential variables. Like adjunct WH phrases such as \textit{how} and \textit{why} and pair-list interpreted variables they denote functions ranging over higher order entities. I speculate that single WH in situ questions in French may refer to previously mentioned facts in discourse or asks for the identification of a subset of a set; in other words, a relation not an individual. A more detailed semantic account is obviously needed.

It remains to be seen whether or not a minimalist analysis other than Boskovic’s (1998a, b) can account for the French data we have considered. The MLC\textsuperscript{16}, as it stands, cannot handle weak islands other than WH islands, so it is doubtful that it will help us with regard to the French data we have analysed in this paper. The challenge for a minimalist theory of weak islands and the MLC is to find a feature that attractees of Q, Neg, Focus, Tense share (cf. Manzini 1998). Relativized Minimality accounts for all the weak islands by appealing to the A’-position that Q, Neg, Focus, etc. have in common.

The French data we have considered in this paper provide evidence against a recent minimalist proposal. Reinhart (1998) - see also Tsai 1994 - claims that the alleged argument-adjunct distinction is in fact an argument-adverb distinction. In (63) both \textit{how} and \textit{what way} are adjunct, but only \textit{what way} is nominal. Because it is nominal this particular WH phrase can be unselectively bound:

\begin{enumerate}
\item[(63) a.] *Who fainted when you behaved how?\newline
\item b. Who fainted when you behaved [\textit{NP what way}]?
\end{enumerate}

(Reinhart 1995:193)

Their analysis is mainly semantic, but is derived syntactically by suggesting that N is generated with an index-argument that must be bound by C. WH-NPs (nominal WH phrases) have an open position and can therefore introduce variables in situ. WH-

\textsuperscript{15} Another explanation for the lack of pair-list reading is that the quantifier \textit{no man} fails to generate a domain (cf. Chierchia 1991, Hornstein 1995). Thus, \textit{Which woman does everybody love t?} is fine. Note anyway that in this case the pair-list interpreted trace is not in an island.

\textsuperscript{16} ‘K \textit{attracts} F if F is the closest feature that can enter into a checking relation with a sublabel of K.’ (Chomsky 1995:297).
adverbs (non-nominal WH phrases) do not have an open position and therefore cannot introduce variables in situ (they denote functions ranging over higher order entities). For Reinhart (1998), semantically, they, unlike WH-NPs cannot introduce a choice function.\footnote{A choice function is an ordered pair whose first member is a specific member of that set.} They therefore have to move unlike WH-NPs.

The fact that French WH phrases, such as *quoi* (‘what’), although nominal on Reinhart’s and Tsai’s standard (it has a null N), cannot be licensed via binding creates a problem for the claim that the relevant distinction we need to draw is between nominals and adverbials rather than between arguments and adjuncts (or more precisely referential vs. non-referential expressions). Reinhart’s (1998) account predicts examples like (6), (7), (10), (11), etc. should be grammatical, since, syntactically at least, nothing stops C binding the choice function introduced by the WH phrase in situ, since this WH phrase is nominal. Her semantic account in terms of choice function may well be correct, but the syntactic analysis is problematic as we have seen.\footnote{Additional empirical evidence that the nominal status of a WH phrase in situ is not sufficient for unselective binding comes from the particular use and behaviour of *what* in languages like Japanese, Chinese, Russian, Modern Greek, Bulgarian, Hebrew, Serbo-Croatian, two of which WH in situ languages. In all those languages, the WH phrase *what* may be used with an interpretation meaning *why* (this type of WH question is appropriate in a context in which the speaker is emotionally affected). This type of WH phrase shares some properties with true adjuncts WH phrases in that it cannot occur in islands, suggesting that in this case the WH phrase denotes a function over higher-order entities (Ochi & Hsin 1999).}

In the next section I turn to partial WH movement, which is still in need of an analysis.

### 4.3 Partial WH movement

So far we have identified on type of null question operators, one which is found in single WH questions (Chinese and French). The two languages differ in what kind of variable type with which the null operator is associated. A second type of question operator is the German WH expletive. One major difference between the German and the French/Chinese question operator is that the former involves embedded clauses, whereas the latter involves matrix clauses.

It has been claimed that partial WH movement dependencies are constructed syntactically indirectly, that is, the expletive WH scope marker is not linked directly with the contentive WH phrase (cf. Marácz 1987, McDaniel 1989), but it is linked to the whole embedded clause, the CP (cf. Horvath 1997, Brody 1997). On this view, the WH
expletive is an A-position expletive rather than an A’-expletive; it originates in non-theta marked A-positions, presumably Spec-AgrsP and Spec-AgroP, for nominative and accusative case respectively. The Agr projection takes the CP as a complement. Evidence for this claim comes from the fact that in Hungarian, WH-expletives scope markers bear non-inherited Case:

(64) a. \[CP_1 \text{Mit mondtál}, \text{CP}_2 \text{hogy kinek vett János színházjegyet}]? \\
\hspace{10pt} \text{WH-ACC said-2sg-indef.DO that who-DAT bought John-NOM theatre-ticket-ACC} \\
\hspace{10pt} \text{Lit. ‘What did you say for whom John bought a theatre ticket?’}

b. \[\text{CP}_1 \text{Mire számítasz, CP}_2 \text{hogy melyik fiúval fog Mari beszélni}]? \\
\hspace{10pt} \text{WH-AL count 2sg that which boy-with will Mary-NOM speak-inf} \\
\hspace{10pt} \text{Lit. ‘On what do you count with which boy Mary will speak?’ ‘What do you expect with which boy Mary will speak?’} \\
\hspace{10pt} \text{(Horvath 1997:527)}

Horvath (1997) argues that the WH expletive could not have inherited its Case by transmission from the lower WH phrase with which it allegedly forms a chain, since the Cases they manifest are (a) distinct (b) incompatible. The analysis can be carried over to partial WH movement constructions in other languages that allow it, the difference being that case on the WH expletive must be assumed to be abstract (i.e. German).

According to Brody (1997), the WH phrase in the intermediate A’-position is licensed in accordance with Transparency (the contentive category in the chain must be in the highest position licensed by morphology - Brody 1995:104). There is no need for the WH phrase or the whole CP (as Horvath 1997 assumes) to move at LF. This is in line with our analysis which argues against movement of WH phrases in situ. The contentive WH phrase moves to the intermediate position to check the +WH feature on C. This intermediate +WH feature will later be disregarded since at LF all WH features merge through a CHAIN construction (a CHAIN is an interpretive chain rather than a syntactic chain), the structure will therefore contain only a single question.

The French WH expletive is an A’ rather than an A-position expletive. It is coindexed via chain formation to the WH phrase directly unlike the German WH expletive. If the WH expletive in German was the same WH expletive we find in French, we would expect German to allow WH in situ in single WH matrix questions contrary to the facts.
The fact that French does not allow the multiple instance of the WH expletive in intermediate Spec-CPs unlike German is further evidence that the two WH expletives are distinct.

The crucial point is that movement of the A-expletive from the embedded clause leaves a trace, which I take to be non-referential\(^{19}\). Since the trace is non-referential, it will need a local antecedent. We can therefore explain the intervention effect:

\[(65)\]
\[
a. \ [_{CP1} \text{Was}_i \text{C} \ldots [_{AgrP} t_i \text{Agr} [_{CP2} \text{WH-phrase}_j \ldots t_j]]]?
\]
\[
b. *[_{CP1} \text{Was}_i \text{C} \ldots [_{NegP} \text{Neg} [_{AgrP} t_i \text{Agr} [_{CP2} \text{WH-phrase}_j \ldots t_j l_i ]]]]?
\]
\[
c. *[_{CP1} \text{Was}_i \text{C} \ldots [_{IP} \text{Quant} [_{IP} \ldots I [_{AgrP} t_i \text{Agr} [_{CP2} \text{WH-phrase}_j \ldots t_j]]]]]
\]

To sum-up: I have discussed three different kinds of WH expletives/operators, two of which behave similarly with regard to extraction from islands. Here is a summary in diagram form:

\[(66)\]
\[
\text{French A’ WH expletive/Op} \quad \text{island effects}
\]
\[
\Rightarrow
\]
\[
\text{A’ WH expletive/Op}
\]
\[
\Rightarrow
\]
\[
\text{Chinese A’ WH expletive/Op} \quad \text{no island effects}
\]
\[
\text{A WH expletive/Op} \rightarrow \quad \text{German} \quad \text{island effects}
\]

Island effects are not due to the kind of expletive, but to the kind of variable it binds. In the case of French null question operator and the German WH expletive, they always bind a non-referential variable, whereas in Chinese the question operator may bind a referential variable.

5 Conclusions

It is time for me to conclude this paper. I hope to have shown that the restrictions on French WH in situ do not in fact pose a problem for the uniform characterization of Move as Move F, in view of the fact that it is not heads that block the licensing of WH in situ in French, but XPs, and more generally A’-specifiers. The introduction of acyclic merge (problematic in the first place) is uncalled for.

\(^{19}\) Horvath (1997) claims that the Agr position is not theta-marked, however, as already mentioned, we are not looking at a position in a tree, but at the type of the variable.
I have argued that in single WH questions, the WH operator that WH all French phrases contain moves to Spec-CP leaving a non-referential variable behind. This, whether the WH phrase in situ is in adjunct or in object position. The variable needs a local antecedent. Island effects are thus expected, since (antecedent) government is a local relation. It remains to be seen whether a minimalist analysis can account for the data.

In multiple WH questions, the highest WH phrase binds the WH phrase in situ in object position, which is essentially a pure variable, so no WH operator movement is necessary. Islands effects are thus not observed in this particular case, since no non-referential trace has been left behind.

I have accounted for the differences between Chinese and French in claiming that contrary to French WH phrases, Chinese WH phrases do not contain a WH operator. Instead, the equivalent operator can be separated from the variable and base-generated in Spec-CP binding a referential variable.

The question as to why the intervention effect exists in the first place remains to be answered. I have suggested that single WH in situ questions in French may be asking for a relation rather than an individual. A more detailed semantic analysis is required. I hope to return to a more complete study of non overt operators, the variables with which they are associated and their different cross-linguistic properties.

References

Tancredi, C. (1990). Not only even, but even only. Ms. Cambridge, MA: MIT.