J East Asian Linguist (2006) 15:319–341
DOI 10.1007/s10831-006-9001-1

ORIGINAL PAPER

Wh-Questions in Vietnamese

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Received: 8 December 2004 / Accepted: 21 December 2005 /
Published online: 21 November 2006
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Abstract The question of whether wh-in situ stays in situ, or undergoes some form of covert wh-movement that parallels overt wh-movement, remains controversial despite decades of research. We present data from Vietnamese which indicate that wh-in situ can be interpreted by either covert movement or unselective binding without movement. Covert movement takes place in matrix questions that lack a question particle, while unselective binding is used when there is a question particle and in embedded questions generally. The Vietnamese data also show that covert movement observes the same constraints—in particular, Subjacency—as overt movement. The correlation between unselective binding and the question particle in matrix questions appears to support recent theoretical views of question particles (e.g., Cheng, 1991), but we argue that this is only apparent. The question particle merely serves a syntactic licensing function, and this function is borne by a question-embedding verb in embedded questions, meaning that it is not inherent to question particles as such. The question particle in Vietnamese actually serves an unrelated semantic function: it indicates realis mood and induces a presupposition. The implication is that question particles are only indirectly related to wh-in situ, if they are related at all.

Keywords Vietnamese · wh-in situ · Covert movement · Unselective binding

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1 Introduction

Vietnamese is a wh-in situ language, as shown in (1).[1] An argument wh-phrase must appear in the position of a corresponding non-wh argument (1a); fronting as in English is not allowed (1b).

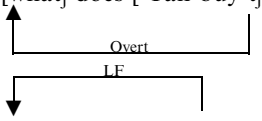
(1)a. Tân mua **gì**?
Tan buy what
'What does Tan buy?'

b. ***Gì** Tân mua?
What Tan buy
'What does Tan buy?'

An important question in current syntactic theory is whether wh-words in situ stay in situ or undergo some form of covert movement that parallels overt wh-movement in languages like English. As is well-known, scope interpretations require wh-phrases to take a position in the sentence such that they take the entire proposition (IP, at least) as their scope (see, for example, Reinhart, 1998 and the references there). In English, this requirement is satisfied by moving wh-phrases to the Spec-CP of the interrogative clause in overt syntax. However, in languages like Vietnamese, wh-phrases remain in their argument position at S-Structure; the question is, then, how wh-in situ take sentential scope.

There are two basic approaches to the issue of wh-in situ: movement and unselective binding. In the movement approach, wh-in situ languages do covertly what English does overtly: move wh-phrases to initial position. Following Chomsky (1976), Huang (1982), in his influential work on Chinese, a wh-in situ language, proposes that all wh-phrases in natural languages are quantifiers and undergo movement to clause-initial position to form an operator-variable relation. Languages differ with respect to where this movement applies: in overt syntax or at LF. English-like languages have this movement in the overt syntax, while Chinese-like languages employ LF movement. Consequently, English and Vietnamese, a Chinese-like language, share the same LF, as illustrated below.

(2)a. [what$_j$ does [Tan buy t$_j$]]



b. [[Tân mua gì]]
Tan buy what
'What does Tan buy?'

[1] It should be noted that there are three main dialects of Vietnamese: Northern, Central and Southern. The judgments in this paper are from the second author, a speaker of the Central dialect, and three other native speakers, of whom two are from the central dialectal area and one is from the north. The particles used in this paper are from the northern dialect, but as far as we are aware, the particles in the three dialects differ only in form and not in function.

The wh-phrase *gì* 'what' ends up, after LF movement applies, at the Spec-CP where it takes scope. The result is identical to the English surface structure in (2a).[2]

In contrast to the movement approach, Baker (1970), Pesetsky (1987), Cole and Hermon (1994), and Reinhart (1998), among others, propose a different mechanism for achieving scope in wh-questions. In this theory, wh-phrases are variables, not quantifiers. There is a Q(uestion)-morpheme functioning as an operator in the Comp of the interrogative clause, which unselectively binds all variables in its c-command domain. As a result, scope interpretation is achieved via binding, not movement. This is illustrated in the following diagram:

(3)a. $[Q_i$ [what does Tân buy t_i]]

b. $[Q_i$ [Tân mua $gì_i$]]

In this paper, we argue that Vietnamese employs both strategies in wh-questions: LF movement occurs in questions without a question particle, and unselective binding is used in questions with a question particle.[3]

Consider the following, for instance:

(4)a. Tân mua **gì** **thế**?
Tan buy what PRT
'What did Tan buy?'

b. Tân mua **gì**?
Tan buy what
'What does/will Tan buy?'

[2] There are other variants of the covert movement approach. One claims that the movement takes place in the overt syntax, but the tail of the chain is pronounced rather than the head (Bobaljik, 1995; Groat & O'Neil, 1996; Pesetsky, 1998). Another is that the wh-phrase itself never moves, but a null operator associated with it does (Aoun & Li, 1993; Hagstrom, 1998; Wanatabe, 1992). We address these theories briefly in footnote 6.

[3] Yes-no questions in Vietnamese use different particles from those that appear in wh-questions. They can be formed either by appending a particle *à* sentence-finally or by inserting a preverbal element *có* and a sentence-final particle *không*. Note that *không* can be used as a negative element as well. Also note that the disjunctive particle *hay* 'or', is optional in matrix questions but is obligatory in embedded questions. The scope of the question will vary according to where *có* apppears. For instance:

(i) Tân **có** gặp Lan **không**?
Tan CO meet Lan PRT
'Did Tan meet Lan?'

(ii) Tân **có** biết Lan đã gặp Thơ **(hay)** **không**?
Tan CO know Lan Asp meet Tho (or) PRT
'Did Tan know that Lan met Tho?'

(iii) Tân biết Lan **có** gặp Thơ **hay** **không**.
Tan know Lan CO meet Tho or PRT.
'Tan knew whether Lan met Tho or not.'

Interested readers may refer to Duffield (2004) where *có* is analyzed as the lexical realization of an Assertion Head. In this paper we restrict our attention to wh-question particles and use 'Q-particle' or 'Question particle' to refer only to wh-question particles.

The sentences in (4) differ only in the presence of a final question particle. We argue, however, that they differ in how the wh-phrase achieves sentential scope: the wh-phrase is bound in-situ by a Q morpheme in (4a), but in (4b) the wh-phrase undergoes LF movement.

The argument for this difference, given in Sect. 3, is that properties of movement, such as sensitivity to islands, hold for questions without particles but disappear in questions with particles. The consequence is that both LF movement and unselective binding are available mechanisms for interpreting wh-in situ, as was proposed by Pesetsky (1987). In Sect. 4 we discuss the nature and the distribution of the question particle in the context of other findings regarding wh-in situ. Even though it allows unselective binding, the particle in Vietnamese does not D-link the wh-phrase in the sense of Pesetsky. Instead, it adds a presupposition that the event has been realized (it encodes realis mood). There is still a role for D-linking in Vietnamese, however, but we argue that D-linked wh-phrases pied-pipe islands that they occur in and are not unselectively bound. This means that D-linking seems to play a role in the derivation of wh-questions universally, but what exactly that role is differs from language to language. Finally, in Sect. 5 we propose that it is not the question particle itself that unselectively binds wh-in situ; instead, there is always a null existential quantifier that does the binding. Thus, the relation between a question particle and unselective binding is only indirect. This has consequences for the theoretical treatment of question particles, meaning, for instance, that Cheng's (1991) Clause Typing Hypothesis is on the wrong track.

Before we turn to the main topic of investigation, however, some background on questions in Vietnamese is necessary.

2 Types of wh-phrases in situ

In Vietnamese, while argument wh-phrases are consistent in remaining in situ, adjunct wh-phrases' behavior varies considerably. For example, the phrase meaning 'when' varies in its position according to tense (it occurs finally in the past, and initially in the future). The phrase meaning 'how' is not a single element but a combination either of a preposition, a noun phrase, and a which-phrase, or a preposition and a wh-phrase, depending on the properties of the predicate it quantifies over:

(5)a. Anh cảm- thấy **như'- thế- nào**?
you feel see like - so- which
'How do you feel?'

b. Anh giúp cô ta **bằng- cách- nào**?
you help she by- way- which
'How do you help her?'

Similarly, the wh-word meaning 'why' always appears in a fixed clause-initial position, and may only take scope in the clause where it appears:

(6)a. Tân biết **[tại sao** Thọ đi New York.]
Tan know why Tho go New York

'Tan knows for which reason x, Tho went to New York for x.'
*'For which reason x, Tan knows Tho went to New York for x?'

b. *Tân biết [Tho' đi New York **tại sao**.]
Tan know Tho go New York why
Intended: 'Tan knows for which reason x, Tho went to New York for x.'

c. **Tại sao** Tân biết Tho' đi New York?
Why Tan know Tho go New York
'For which reason x, Tan knows for x that Tho went to New York?'
*'Tan knows for which reason x, Tho went to New York for x.'
*'For which reason x, Tan knows that Tho went to NY for x?

No long-distance reading is available in either (6a) or (6c).

Because there are no long-distance readings with adjunct wh-phrases, there is no sense talking about movement versus unselective binding with adjunct wh-phrases. Testing for diagnostics of movement necessarily requires a long-distance relationship. For that reason we limit our discussion here to argument wh-phrases.

Argument wh-phrases do allow long-distance readings, an indication that wh-questions in Vietnamese have one property of wh-movement (Chomsky, 1976): potential unboundedness. We will illustrate this property while simultaneously showing that, despite the fact that there is no overt wh-movement in a wh-question, wh-question clauses in Vietnamese behave just as English ones do as far as selectional restrictions are concerned.

It is well known that there is a correlation between scope interpretation and selectional restrictions. For example, in Vietnamese *biết* 'know' can occur with either an interrogative or a non-interrogative complement. The long-distance reading entails that the verb selects a non-interrogative clause and the local reading an interrogative clause:

(7) Tân biết **ai** đi New York.
Tan know who go New York
'Tan knows for which person x, x went to New York.'
'For which person x, Tan knows that x went to New York?'

The long-distance reading also requires some mechanism for achieving scope higher than the surface position of the wh-phrase; the scope position for 'who' in that reading is the matrix clause.

Next, consider (8) and (9). The verb *nói* 'say' selects only non-interrogative clauses; embedded yes-no questions are ill-formed, for instance (8a). When a wh-phrase occurs in the embedded clause, only the matrix wh-question reading is allowed.

(8)a. *Tân nói Tho' có gặp Lan hay không.
Tan say Tho CO meet Lan or PRT
'Tan said whether Tho met Lan.'

b. Tân nói Tho' đã gặp **ai** ?
Tan say Tho Asp meet who

'For which person x, Tan says Tho met x?'
*'Tan says for which person x Tho met x'.

By contrast, the verb *muốn biết* 'want to know' selects only an interrogative complement. Hence, no matrix wh-question reading is allowed, as shown in (9a). When the embedded clause is a declarative, the sentence is as bad as its English counterpart, as in (9b).

(9)a. Tân muốn biết Thọ đã gặp **ai**
Tan want know Tho Asp meet who
'Tan wants to know for which person x Tho met x.'
*'For which person x, Tan wants to know Tho met x?'

b. * Tân muốn biết [Thọ đã gặp Tiên.]
Tan want know Tho Asp meet Tien
'Tan wants to know Tan met Tien.'

Note that long-distance readings are available in both (7) and (8): the wh-phrase can take scope in the matrix clause even though it occurs in the embedded clause on the surface.

Vietnamese offers another means for obtaining the matrix scope interpretation: appending a particle to the sentence, as shown in (10).[4]

(10) Tân biết **ai** đi New York **thế**?
Tan know who go New York PRT
'For which person x, Tan knew that x went to New York?'
* 'Tan knew for which person x, x went to New York.'

Note that this particle appears in the matrix clause only, as indicated by the lack of ambiguity in (10). Because the particle is linearly sentence-final, it is not clear from the surface word order whether the particle goes with the embedded clause or the

[4] The particle *thế* is used only for wh-questions and cannot occur in yes-no questions or in non-interrogative clauses, as shown below.

(i) *Tân gặp Lan **thế**?
Tan meet Lan PRT
(Intended) 'Did/Will Tan meet Lan?'

(ii) a. Tân gặp Lan **mà**.
Tan meet Lan PRT
'Tan met Lan (I am sure.)

b. * Tân gặp Lan **thế**.
Tan meet Lan PRT
'Tam met Lan (I am sure).'

(i) indicates that *thế* is not a yes/no question particle. (iib) shows that it cannot appear in declarative clauses as an emphatic marker the way the particle *mà* does in (iia). We are thankful to an anonymous reviewer who raised the issue of whether *thế* is only a wh-question particle or a question particle in general, or whether it can appear in declarative clauses as well.

matrix clause. Along with the lack of ambiguity in (10), however, constituency tests place the particle in the matrix clause. As shown by (11b), when the embedded clause is fronted, the particle may not front with it: [5]

(11)a. [$_{CP}$ **Ai** đi New York] $_i$ Tân biết t_i.
who go New York Tan know
'Tan knows for which person x, x went to New York.'

b. *[$_{CP}$ **Ai** đi New York **thế**] $_i$ Tân biết t_i.
Who go New York PRT Tan know
'Tan knows for which person x, x went to New York.'

Sentence (11a) has only the embedded reading, but matrix question readings are available in sentences with fronted embedded clauses when they have both a sentence-final particle and the particle *mà* as a focus marker of some sort, as shown in (12a). But sentence (11b) is still ungrammatical even with *mà*, as illustrated in (12b):

(12)a. [$_{CP}$ **Ai** đi New York] $_i$ **mà** Tân biết t_i. **thế?**
who go New York PRT Tan know PRT
'For which person x, Tan knew x went to New York?'

b. *[$_{CP}$ **Ai** đi New York **thế**] $_i$ **mà** Tân biết t_i.
who go New York PRT PRT Tan know
'Tan knew for which person x, x went to New York.'

The contrast shown above confirms that the particle *thế* only appears in matrix clauses.

In summary, wh-in situ in Vietnamese can take scope in different positions, as allowed by selectional requirements. They may take matrix scope even when they occur in an embedded clause, and they always take matrix scope when a question particle appears in the matrix clause. As stated above, we argue that wh-phrases in Vietnamese undergo covert movement to their scope positions when there is no question particle, but they remain in situ when there is a question particle and are unselectively bound. The arguments for this difference come from syntactic characteristics that have been found to diagnose movement.

3 Diagnostics of movement

The movement diagnostics that we will employ are sensitivity to islands and intervention effects. As we will see, these appear in questions without a question particle, but do not appear in questions with a question particle. This difference indicates that wh-phrases move to obtain scope when there is no question particle, but remain in situ when there is a question particle.

[5] The embedded yes-no particle can be fronted, for example:
(i) [Lan **có** gặp Thọ **hay** **không**] $_j$, Tân biết t_j
Lan CO meet Tho or PRT Tan know
'Tan knew whether Lan met Tho or not.'

3.1 Subjacency effects

It is clear that in languages like English overt wh-movement observes Subjacency, but it is controversial whether or not LF movement has to obey it. There is no consensus in the literature on this issue. Huang (1982) proposes that LF movement in Chinese, and in general, does not have to obey Subjacency. By contrast, Pesetsky (1987, 2000) holds that LF movement does obey Subjacency and other restrictions that govern overt movement. This position has been argued for by numerous others as well, such as Cole and Hermon (1994) and Richards (2001). The data below will indicate that LF movement in Vietnamese does obey all restrictions on movement, including Subjacency. It thus adds to the evidence accumulated by the authors above indicating that LF movement is no different from overt movement in this respect.[6]

The following data indicate that wh-questions in Vietnamese obey island constraints. They also demonstrate an asymmetry in island sensitivity: When a wh-phrase appears inside an island and the question lacks a particle, it is ungrammatical, but with a particle the sentence is grammatical. Consider the case of a complex NP, for instance:[7]

(13)a. *Tân sẽ chụp hình [$_{NP}$ con hổ [$_{CP}$ đã dọa **ai**]]?
Tan Asp catch picture Cl tiger Asp scare who
'Tan will take a photo of the tiger that scared who?'

b. Tân vừa chụp hình [$_{NP}$ con hổ [$_{CP}$ đã dọa **ai**]] **thế** ?
Tan Asp catch picture Cl tiger Asp scare who PRT
'Tan took a photo of the tiger that scared who?'

The ungrammaticality of (13a) indicates that LF movement takes place. There must be no corresponding movement in (13b) since the sentence is grammatical.

The same holds for the Sentential Subject Constraint:

(14)a. *[$_{CP}$ **Ai** sẽ bỏ đi] làm mọi người bối rối?
who Asp leave make everyone embarrass
'That who will leave will make everyone embarrassed?'

b. [$_{CP}$ **Ai** vừa bỏ đi] làm mọi người bối rối **thế**?
Who Asp leave make everyone embarrass PRT
'That who left made everyone embarrassed?'

We see the same thing with the Adjunct Island Constraint:

[6] The alternative is, of course, that overt but invisible movement is taking place rather than LF movement. However, the only reason we can see to posit this is to maintain that LF movement does not have to obey Subjacency. Taking this road would complicate everything: the theory, since we have to stipulate a difference between overt and covert movement that is conceptually unmotivated, and the analysis of the data, since we would have to posit invisible elements whose interpretation would be unclear at best. A null operator undergoing overt movement could be equivalent to the Q-particle (basically, an existential quantifier), but then we would wonder why it has to move when it can be base-generated in CP when there is a particle.

[7] As we will see below, questions without the particles are irrealis, while questions with the particles are realis. Hence the contrasting pairs in this section often differ in aspect as well.

(15)a. *Tân sẽ thua cuộc [$_{CP}$ vì **ai** làm
Tan Asp lose event because who make
hư xe của anh ta]?
damage vehicle belong he
'Tan will lose the race because who will damage his car?'

b. Tân thua cuộc [$_{CP}$ vì **ai** làm
Tan lose event because who make
hư xe của anh ta] **thế**?
damage vehicle belong he PRT
'Tan lost the race because who damaged his car?'

The (a) sentences are good only if they are echo questions. They are ungrammatical as genuine requests for information. However, the (b) sentences are grammatical with the question particle.

As stated above, we hypothesize that Vietnamese wh-questions employ two mechanisms: unselective binding and LF movement. Let us consider the (a) sentences. The binding theory would propose a null Q as a binder in these sentences so that the operator–variable relation can be established via binding. This hypothesis predicts incorrectly that the sentences would be grammatical, since binding is not sensitive to island boundaries (Chomsky, 1977). Huang's version of the LF movement analysis would also incorrectly predict that the (a) sentences are grammatical because in his theory Subjacency holds of S-Structure movement only. The only way to account for the ungrammaticality of these sentences is to hypothesize that LF movement occurs, and that LF movement must obey Subjacency.

Continuing in this line of reasoning, we must conclude that, just as there is LF movement in the (a) examples, there is none in the (b) examples. Since we explained the island sensitivity of the (a) examples by postulating LF movement, the island *in*sensitivity of the (b) examples must be taken to indicate that there is no LF movement in these examples. If we adopt the unselective binding theory for the (b) examples, their grammaticality can be accounted for naturally: an operator–variable relationship is formed between the wh-phrase as a variable and the Q particle as an operator. Since binding is not sensitive to island constraints, these examples are fine. Furthermore, since the only difference between the island-sensitive and the island-insensitive questions is the absence versus presence of the question particle, we can conclude that the question particle has some role to play in inducing or enabling unselective binding (for instance, it itself might be the binder; we argue against this below, however, and suggest that it serves to license the binder, which is null).

Since some wh-phrases in Vietnamese move at LF and some do not, we hypothesize that Vietnamese wh-phrases are ambiguous between being strong quantifiers and being weak indefinites, just like indefinites in English. Milsark (1974) and numerous authors after him, such as Diesing (1992), distinguish two types of quantifiers: strong quantifiers like 'every' and weak quantifiers like unstressed 'some'. An NP with a weak determiner, like 'some student', is ambiguous. For instance, consider Diesing's discussion of the following sentences:

(16)a. There are some ghosts in my house. (unstressed *some* asserts existence of ghosts)
b. Some ghosts are in the pantry; the others are in the attic. (stressed *some* presupposes the existence of ghosts)

The indefinite NP 'some ghosts' can be interpreted as a strong quantifier as in (16b); this sentence presupposes the existence of ghosts. Sentence (16a), by contrast, simply asserts the existence of ghosts (in my house). The NP 'some ghosts' in this case functions as a cardinal predicate introducing a variable; this variable is then bound by an existential quantifier inserted through the operation of existential closure (Heim, 1982).

We propose that Vietnamese wh-phrases are similarly ambiguous between quantifiers and weak indefinites (cf. Cole & Hermon, 1998). As quantifiers, they will move for scope interpretation; and as weak indefinites, they obtain their quantificational force from other operators they appear with. In a wh-question, some kind of operator (an existential quantifier) taking scope over the proposition binds them. (A sentence will crash if the wrong version of the wh-phrase is chosen; for instance, if we insert the strong version of a wh-phrase into a sentence with a question operator, the operator will have nothing to bind, in violation of the ban on vacuous quantification. If we insert the weak version into a sentence without a question operator, nothing will bind it.)

3.2 LF blocking effects

Further evidence for the existence of both LF movement and unselective binding comes from blocking effects on LF movement. Beck (1996), based on data from German, claims that LF movement of quantifiers, including wh-words, is blocked by other quantificational expressions. A formulation of this restriction is given in (17), with illustrative examples in (18).

(17) *[…X_i …[Q or Neg …[… t_i ^{LF} …]]]

(18)a. ??Wer hat *niemanden* **wo** angetroffen?
Who has nobody where met
'Who didn't meet anybody where?'

b. Wer hat **wo** *niemandem* angetroffen?
Who has where nobody met
'Who didn't meet anybody where?'

In (18a), when the in situ wh-phrase *wo* is preceded and c-commanded by the negative quantifier *niemanden*, the sentence is ungrammatical. By contrast, when *wo* occurs structurally above the negative quantifier *niemanden*, as in (18b), the sentence is grammatical. Beck accounts for this pattern by hypothesizing that in multiple questions like (18), the wh-phrase insitu must move at LF to Spec-CP. This movement is blocked in (18a) by the negative quantifier, given the constraint in (17). In (18b), however, the wh-phrase *wo* has moved *overtly* across the negative quantifier; hence there is no barrier to LF movement. In other words, only LF movement and not S-Structure movement is sensitive to the blocking constraint.

Vietnamese shows a similar blocking effect in the following examples. A wh-phrase when followed by *cũng* obtains a universal reading, as in (19a). When another wh-phrase occurs in object position, the sentence is ungrammatical as a

question in (19b). However, the sentence becomes grammatical if a wh-particle is added, as in (19c).[8]

(19)a. **Ai** cũng thích bóng đá.
Who CUNG like football
'Everyone likes football.'

b. ***Ai** cũng thích **cái gì**?
Who CUNG like what
'What does everyone like?'

c. **Ai** cũng thích **cái gì** **thế**?
Who CUNG like what PRT
'What did everyone like?'

The same pattern can be found in cases where a wh-word is preceded by a negative quantifier. In Vietnamese, a wh-phrase obtains an NPI reading when it is in the scope of negation, as in (20a). (20b) is ungrammatical as a wh-question without a particle, as opposed to (20c) with one.[9]

[8] It should be noted that the universal quantifier illustrated in (19) is only one of the options that Vietnamese employs. A universally quantified expression can also be made up of a universal quantifier, such as *mọi, tất cả*, meaning 'all', and an NP. For example:

(i) tất cả các học sinh
all Plural student
'all the students'

(ii) mọi học sinh
all student
'all students'

Blocking effects do not show up with universal quantifers of this type. For instance:

(iii) Tất cả các học sinh đều làm gì?
all Plural student DEU do what
'What do all the students do?'

As suggested by the English translation in (iii), this universal quantifier *tất cả các học sinh* conveys a referential group interpretation, referring to the set of students salient to both the speaker and hearer as a whole. There is no pair-list reading in (iii). If this NP is actually a group-denoting noun and not a quantifier, it would not be expected to give rise to an intervention effect.

[9] Note that there is an alternative negative particle, *không*. Sentential negation formed by this particle does not cause blocking, while that formed by *chẳng* does, as shown below.

(i) Tân không mời ai.
Tan Neg invite who
a. For which person x, Tan did not invite x?
b. There is not any person x such that Tan invited x.

(ii) Tân chẳng mời ai.
Tan Neg invite who
a. *For which person x, Tan did not invite x?
b. There is not any person x such that Tan invited x

At the moment, we have no explanation for why one negative particle blocks LF movement but another does not.

(20)a. Chẳng **ai** mời Tân.
Neg who invite Tan
'No one invites/ will invite Tan.'

b. *Chẳng **ai** mời **ai**?
Neg who invite who
'Who does/ will no one invite?'

c. Chẳng **ai** mời **ai** **thế**?
Neg who invite who PRT
'Who did no one invite?'

The ungrammaticality of the (b) sentences in the examples above as opposed to the grammaticality of the (c) sentences can be nicely captured by the theory that wh-phrases in Vietnamese move if there is no particle but do not move if there is one. In the (b) sentences above, this movement is blocked by the preceding and c-commanding quantifiers; hence the sentences are ungrammatical. The unselective binding mechanism requires no movement; hence, the blocking effect is not operative in the (c) sentences, where a particle appears.

We should be careful with these blocking effects, however. Tomioka (2004) argues that there are two types of blocking effects: the German type illustrated above, and the Japanese/Korean type. The latter, according to Tomioka, are not due to LF movement. For instance, blocking effects become much weaker in embedded contexts in Japanese and Korean. If these effects were due to LF movement, there would be no root-embedded contrast as appears in (21).

(21)a. *Amuto mues-ul ilkci-anh-ass-ni
anyone what-Acc read-Neg-Past-Q
'What did no one read?'

(Korean)

b. * Daremo-ga nani-o yom-da-no
everyone-Nom what-Acc read-Past-Q
'What did everyone read?

(Japanese)

c. (?)Ne-nun[$_{CP}$ amuto mues-ul
you-Top anyone what-Acc
ilkci-anh-ass-ta-ko] sayngkakha-ni
read-Neg-Past-Dec-Comp think-Q
'What do you think that no one read?'

(Korean)

d. (?)Kimi-wa [$_{CP}$ daremo nani-o
you-Top anyone what-Acc
yom-ana-katta-to] omotteiru
read-Neg-Past-Dec-Comp think-Q
'What do you think that no one read?'

(Japanese)

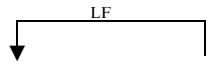
The sentences in (21a, b) are ungrammatical, apparently for the same reason that similar German examples are ungrammatical. But when the exact same sentences are embedded as in (21c, d), their grammaticality improves subtantially. Tomioka's explanation for the contrast in (21) is basically that in Korean and Japanese every sentence must have a topic. The default topic is the subject. Quantifiers such as *amuto* and *daremo* are not suitable topics, since topics, old or familiar information, are typically referential expressions. Hence, (21a, b) are ungrammatical not because of LF blocking, but because they lack topics or have unsuitable topics. In contrast, the matrix subjects in (21c, d) are pronouns, which are perfect as topics. That is why there is a root-embedded contrast in Japanese and Korean.

So to argue that the blocking effect in Vietnamese is due to LF movement, we have to be careful that the blocking effects are not of the Japanese/Korean type. This seems to be true: Vietnamese behaves like German in not showing a root-embedded contrast:

(22)a. Tân biết chẳng ai gặp **ai**.
Tan know Neg who meet who
'Tan knows no one met anyone.'
* 'Who does Tan know no one met?'

b. Tân biết chẳng ai gặp **ai** **thế**?
Tan know Neg who meet who PRT
'Who did Tan know no one met?'

(22a) is grammatical with the interpretation where the two wh-phrases are NPIs, as indicated by the translation. It is ungrammatical as a question, even though the matrix subject is a proper name, which is a perfect topic. In contrast, (22b) with a particle is grammatical. The same analysis can be employed here: LF movement must take place when there is no particle, but LF movement cannot cross a negative quantifier. When there is a particle, the wh-word obtains the appropriate scope interpretation via binding, not movement, and so it is immune to any constraints on movement such as Beck's filter, as illustrated in (23):



(23) *[$_{CP}$ __ NPI or QP … wh …]
√ [$_{CP}$ OP $_{i}$ NPI or QP … wh $_{i}$ …]

The topic account of Japanese and Korean cannot account for the contrast between (22a) and (22b). Additionally, the fact that (19c) and (20c) are grammatical with a particle shows that there is no topic requirement in Vietnamese: (19c) and (20c) do not differ from the ungrammatical (19b) and (20b) in the topicality of the subject.

To sum up the results of this section, the data above provide strong support for the hypothesis that both LF movement and unselective binding are involved in Vietnamese wh-questions. When the question particle is absent, wh-words may not appear in islands, and they may not be c-commanded by other quantificational elements. Islands are standardly taken to diagnose movement, and if Beck is correct, blocking effects specifically diagnose LF movement. Hence, we conclude that

wh-words must move to the Spec-CP where they take scope when there is no question particle. The total absence of these effects when a question particle appears indicates that no movement takes place when a particle is present; instead we have some kind of unselective binding.

4 What is the particle?

The alternative patterns of wh-questions with respect to the presence and absence of wh-particles in dealing with island constraints and LF blocking resemble the patterns shown by D-linked and non-D-linked wh-phrases in English. It is well-established that when a wh-phrase is D-linked, which is when the answers are drawn from a presupposed set (Pesetsky, 1987), it is immune to movement constraints. For example, consider (24).

(24) a. Who bought what?
b. *What did who buy?
c. Which book did which person buy?

The wh-phrase in situ in (24b) is non-D-linked and is subject to the Superiority Effect (Chomsky, 1973). In contrast, the in situ wh-phrase in (24c) is D-linked, and there is no Superiority Effect. According to Pesetsky, this is because an in situ D-linked wh-phrase does not have to move; it can be interpreted via unselective binding.

In English, movement versus non-movement seems to correlate with D-linking. Pesetsky (1987, 2000) argues that this correlation holds in other languages too, like Japanese and German. Others have shown that D-linking is relevant in other languages as well, for example Bulgarian and Romanian (Comorovski, 1996). Is there such a correlation in Vietnamese? In the previous section, we showed that when a wh-particle is present in a wh-question, there are no Subjacency or LF blocking effects, while wh-questions without a particle are subject to Subjacency and LF blocking effects. Does this mean a wh-phrase is D-linked when it co-occurs with a wh-particle?

4.1 Question particles and D-linking

The answer to this question is no. There is no correlation between particles and D-linking in Vietnamese. A wh-word with a particle can be non-D-linked, and a wh-word without a particle may be D-linked. Consider the following situations.

Suppose there are three possible prizes for a contestant in a game show, and the show's host wonders which prize the winner will choose. In this situation, the possible answers come from an established set, namely the three prizes that are plainly visible to the audience and the contestants. That is, this is a D-linked context. Nevertheless, the question the host will ask is (25a) without a particle, not (25b) with a particle. (25b) is only felicitous in a situation where the contestant has already made his choice and the enquirer (for example, an audience member) wonders which he has chosen.

(25) a. Anh chọn **cái** **nàọ**?
you choose Cl which
'Which do you choose?

b. ?#Anh chọn **cái** n**ào** **thế**?
you choose Cl which PRT
'Which did you choose?'

If the presence of the particle were related to D-linking, then it is expected that (25b) would be the preferred form in this context and that (25a) would be infelicitous. But the fact is just the opposite.

The situation for (25) shows that D-linking does not require a particle. The converse also holds: particles can be used in non-D-linked contexts, meaning that particles, when they appear, do not induce D-linking.

To see this, consider a scenario where a pedestrian sees a policeman in the middle of a noisy crowd. This person, thinking that something may have happened, comes over and asks the policeman:[10]

(26)a. Chuyện gì xãy ra **thế**?
story what happen PRT
'What happened?'

b. ?#Chuyện gì xãy ra?
story what happen
'What happened?'

It is clear that there is no presupposed set of possible answers in this context (anything in the world could have happened). Yet, the use of the particle is required. Its absence makes the sentence unacceptable. In other words, the particle does not require or induce D-linking.

At this point, it seems safe to conclude that a particle is not required in D-linked contexts and a particle does not require a D-linked context to be felicitous. Therefore, question particles are completely independent of D-linking in Vietnamese. So, what is the real nature of this particle?

Consideration of a broad range of examples, including those above, indicates that the wh-particle *thế* in Vietnamese is associated with realis mood. When it is used, the speaker presupposes the existence of the entity described by the wh-phrase and the realization of the event described by the predicate and believes that the hearer shares this knowledge. For example, in the case of the passer-by and the policeman, in order to ask (26a) the speaker must have a strong presupposition that something has happened and that the policeman knows what it is. (26b) would be used in other contexts, for instance, in a chemistry class where a teacher demonstrates an experiment and asks the students, before performing the act of mixing two chemicals, what the outcome of this act will be. In this situation the teacher does not presuppose that the students know what chemical reaction follows the act, nor has the act yet occurred. The use of the particle would not be felicitous in this case.

Imagine another context where A saw Tan talking to a group of students, and the day after A asks Tan who they were. Sentence (27a) is felicitous. (27b) is unacceptable in this context. Suppose A wants to know about Tan's plans, that is, which students Tan is *going to* talk to, then (27b) is felicitous.

[10] There is a vocative particle as a polite form of address that would normally be used in (27), but we leave it out to avoid confusion with the question particle.

(27)a. Anh nói Chuyện vớ'i sinh viên nào **thế**?
you talk story with student which PRT
For which student x, you talked to x?

b. Anh nói chuyện vớ'i sinh viên nào?
you talk story with student which
For which student x, you talk to x?

The entities described by the wh-phrase in (27a) are known to exist by both the speaker and the hearer, and the predicate 'talk' has been realized in (27a). In contrast, the entities described by the wh-phrase in (27b) may or may not be assumed to exist by the speaker. In addition, the event has not been realized.

So far the contrast between questions with particles and questions without particles can be described as a contrast between future and non-future contexts. Consideration of further examples shows that this is not exactly the case, however, and that the actual contrast is realis–irrealis. Consider the following, for example.

Imagine an interview where subjects are asked about the British Queen. The interviewer wants to know who would have suffered most if the Queen had passed away 2 years ago and who will suffer most if she passes away next year. The questions in Vietnamese would both lack particles:

(28)a. Ai vô cùng đau khổ nếu Nữ Hoàng
who endless hurt suffer if Queen
qua đời cách đây hai năm (*thế)?
pass life ago two year PRT
'Who would have suffered if the Queen had passed away two years ago?'

b. Ai sẽ vô cùng đau khổ nếu sang năm
who Asp endless hurt suffer if come year
Nữ Hoàng qua đời (*thế)?
Queen pass life PRT
'Who will suffer most if the Queen passes away next year?'

In (28a) the hypothetical event is in the past, and in (28b) it is in the future. Yet the use of the particle is ungrammatical in both questions. This confirms that there is no correlation between the use of the particle and a future-non-future contrast. Rather, the particle encodes realis mood: the events characterized by the predicates in the questions have already happened. The counterfactual events in (28) have not happened, whether they are located in the past or in the future.

This realis–irrealis contrast also appears in the questions given at the beginning of this paper, where the use of the particle was described as optional. It is actually not optional, and questions with and without particles have different presuppositions. For instance, in (4a) versus (4b), repeated below, the question with the particle presupposes that Tan did buy something, but the question without the particle does not.

(4)a. Tân mua gì **thế**?
Tan buy what PRT
'What did Tan buy?'

b. Tân mua **gì**?
Tan buy what
'What does/will Tan buy?'

The conclusion so far, then, is that unselective binding is not universally related to D-linking. The presence of a Q-binder, which enables unselective binding, is triggered by language-particular factors. In English and numerous other languages unselective binding appears to be triggered by D-linking; in Vietnamese it appears to be realis mood that licenses unselective binding. In Sect. 5 we will speculate that the connection between realis mood and unselective binding is only indirect and hence probably accidental in Vietnamese.

4.2 D-linked wh-phrases

In addition, there is still a role for D-linking in Vietnamese. D-linked wh-phrases turn out to be grammatical in islands even without wh-particles.

Suppose at a book fair, any reader can meet the author of any book that is on display. A asks B about Tan. Sentence (29a) is ungrammatical, due to the Complex NP Constraint violation. Sentence (29b), with a 'which' phrase, is substantially improved. Sentences (29c,d) with a particle are perfect, as expected. What is unexpected is that (29b) is not ungrammatical. Note, however, that B's answer to (29b) must be either the whole sentence as in (30a) or the whole island as in (30b). (30c) is a felicitous answer only to (29c) with a particle, not to (29b).

(29)a. *Tân định gặp [$_{NP}$ người [$_{CP}$ đã viết gì]?
Tan intend meet human Asp write what
'Tan intends to meet the person who wrote what?'

b. Tân định gặp [$_{NP}$ người [$_{CP}$ đã viết quyển sách nào]]?
Tan intend meet human Asp write Cl book which
'Tan intends to meet the person who wrote which book?'

c. Tân định gặp[$_{NP}$ người [$_{CP}$ đã viết quyển sách nào]] **thế**?
Tan intend meet human Asp write Cl book which PRT
'Tan intended to meet the person who wrote which book?'

d. Tân định gặp [$_{NP}$ người [$_{CP}$ đã viết gì] **thế**?
Tan intend meet human Asp write what PRT
'Tan intended to meet the person who wrote what?'

(30)a. Anh ấy định gặp [$_{NP}$ người[$_{CP}$ đã viết quyển sách bày trên quầy Z]]
he intend meet human Asp write Cl book display on counter Z
'He intended to meet the person who wrote the book displayed on counter Z.'

b. [$_{NP}$ Người [$_{CP}$ đã viết quyển sách bày
human Asp write CL book display
trên quầy Z.]]
on counter Z
'The person who wrote the book displayed on counter Z.'

c. *Quyển sách bày trên quầy Z.
'The book displayed on counter Z.'

In accounting for the absence of island constraints in Japanese, Nishigauchi (1986) proposes that wh-movement moves the entire island that contains a wh-phrase to the operator position of the clause where it takes scope (as well as the wh-phrase, which itself moves within the island). We propose that a similar process applies in Vietnamese as well, just when the wh-phrase is D-linked.

The evidence that Nishigauchi uses to argue for the pied-piping of islands is possible answerhood, exactly as we saw above in (30). Let us assume that the following principle proposed by Pesetsky (1987) universally holds:

(31) Felicity Principle: *A felicitous answer to a wh-question consists of a phrase structurally identical to the wh-phrase whose index is immediately dominated by the Comp of the question at LF.*

Consider again the answers in (30) to the D-linked wh-question in (29).[11] (30a, b) are felicitous since they recapitulate the entire island, as would be required by the Felicity Principle above if the whole island moves at LF to Spec-CP. An answer that corresponds just to the wh-phrase embedded in the island as in (30c) is unacceptable, as would be predicted by the Felicity Principle if the whole island has moved at LF.

This idea also explains the contrast with a single-word answer in the case of islands with a particle, shown in (32).

(32)a. Tân nói chuyện với [$_{NP}$ ông bác sĩ [$_{CP}$ [$_{IP}$
Tan talk story with CL doctor
vừa mua gì]]] **thế**?
just buy what Part
'What did Tan talk to the doctor who just bought?'

b. Sách.
book
'Books.'

Because the particle induces unselective binding, no pied-piping takes place, and a single-word answer satisfies the felicity principle (presumably the felicity principle is vacuously satisfied if *no* wh-phrase occupies Spec-CP).

[11] One out of the three native speakers we have consulted with does accept (30c) as an answer to (29b). Everyone is, however, consistent in preferring sentence (30a, b) as answers to question (29b) and (30c) as an answer to (29c). For the second author, (30c) is totally unacceptable as an answer to (29b).

4.3 Summary

So far, then, we have seen three ways in which the interpretation of wh-questions in Vietnamese is realized: first, there is unselective binding in questions with a particle; second, there is LF movement in questions without a particle. LF movement divides into two types: movement of just the wh-phrase, if it is not D-linked, or movement of an island containing a wh-phrase, if it is D-linked. As discussed above, the question particle is not related to D-linking in any way; instead, it encodes realis mood and induces a presupposition. The next question is, why would a discourse particle associated with realis mood also be an unselective binder?

5 Embedded clauses

This question requires further data for a satisfactory answer. Consider the following examples. The data below show that island constraints are always absent from embedded clauses and that embedded wh-questions never have an overt particle.

(33)a. [Tân sẽ mua [$_{NP}$ ngôi nhà [$_{CP}$ mà **ai**
Tan Asp buy Cl house Rel who
đã xây dựng]] ***(thế́)]**?
Asp build PRT
'Who does/will Tan buy the house that built?'

b. Lan muốn biết [$_{CP}$ Tân sẽ mua ngôi
Lan want know Tan Asp buy Cl
nhà mà **ai** đã xây dựng] (***thế́**)
house Rel who Asp build PRT
'Lan wants to know who Tan will buy the house that built.'

The question in (33a) requires the particle, as was shown above, since the wh-phrase is inside an island. However, when (33a) is embedded, as in (33b), the pattern reverses: it is grammatical without the particle, and in fact the particle makes the sentence ungrammatical. This is because 'want to know' requires a question complement, but the particle, which occurs only in matrix clauses, requires a matrix question reading.

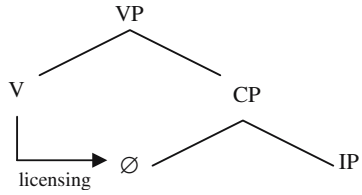
What is surprising is that (33b) is grammatical at all. As an embedded question, it cannot have a particle. Since particles are necessary to circumvent the island constraints, we would expect that wh-phrases would always be ungrammatical in islands in embedded questions. The exact opposite is the case, however: they are always grammatical.

To explain this fact and answer the question above, we suggest that the particle itself is not the unselective binder in matrix questions. Embedded questions apparently have a null unselective binder of some kind. Following a suggestion of S. Tomioka (p.c.), we propose that the Q binder is always null, even in matrix questions. In this theory, matrix and embedded questions are the same: they both have a null Q binder. This null binder requires an appropriate licensor, however. In embedded clauses it is licensed by the head that selects the embedded clause, the higher verb. In matrix clauses the Q binder is also licensed by a selecting head; we suggest that this is the particle. The diagram in (34) illustrates this hypothesis: The embedded Q particle is licensed by the higher verb, while the matrix Q particle is

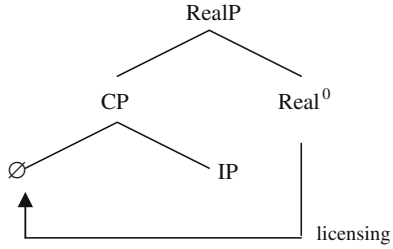
licensed by the particle *th*ế́, which we hypothesize is the head of some functional projection related to realis mood:

(34) **Null Q licensing**

a. Embedded



b. Matrix



This proposal provides a uniform characterization of the unselective binder: it is always null. The difference between matrix and embedded questions lies in how the binder is licensed. The role of the question particle is this licensing; it itself is not the binder. Our response to the question of why a particle associated with realis mood would also serve as an unselective binder is that it does not. The relation between the question particle and unselective binding is only indirect. We think that this is probably correct cross-linguistically; the correlation between question particles and wh-in-situ is indirect, at best, contra claims to the contrary (see Bruening, to appear).[12]

[12] A reviewer suggests that it is the realis nature of a clause that allows for unselective binding. If this were the case, then an embedded irrealis clause should disallow unselective binding and hence show island effects. The following data show that this is incorrect and that embedded questions are never sensitive to islands, whether they are realis or irrealis.

(i) Tân muốn biết Lan sẽ cưới [một người đàn ông [cao bao nhiêu]]
Tan want know Lan Asp marry one CL man tall how-many
nếu có cõ hội.
if have chance
'Tan wonders how tall Lan will marry a man who is if she has the chance.'

(ii) Tân muốn biết Lan sẽ mua [căn nhà [mà ai đã xây dưng]].
Tan want know Lan Asp buy Cl house REL who Asp build
'Tan wonders who Lan will buy a house that made.'

The grammaticality of sentences (i) and (ii) indicates that the realis–irrealis distinction is irrelevant in embedded clauses. We take this to support the purely syntactic licensing theory in the text: a governing head can license the null Q binder, regardless of the semantic content of that head.

6 Conclusion and implications

The data presented here show that Vietnamese wh-phrases attain scope either through movement at LF or through unselective binding by a Q particle. LF movement is sensitive to constraints similar to those on overt movement; unselective binding is not. If this is right, the conclusion must be that Pesetsky (1987, 2000) is correct that both LF movement and unselective binding are available mechanisms for the interpretation of wh-in situ.

The data here also indicate that D-linking may universally play a role in the syntax of wh-questions, but that role appears to vary from language to language. In some languages D-linking is related to unselective binding; in others, like Vietnamese, it is related to LF pied-piping. In addition, the nature of the wh-question particle as a marker of realis mood in Vietnamese has important implications for theoretical views of question particles cross-linguistically. The theory that we tried to motivate here does not include any necessary connection between the wh-question particle and unselective binding or wh-in situ more generally. The particle only serves a syntactic function: it licenses a null Q binder in its complement. It shares this function with question-embedding verbs, meaning that there is nothing about its being a question particle that leads to this function. We think that this is the right view of question particles cross-linguistically: that they are only indirectly related to unselective binding, or wh-in situ more generally. Bruening (to appear), in a cross-linguistic study, shows that there is no correlation between question particles and wh-in situ. The fact is that most languages have question particles, whether they are wh-movement or wh-in situ languages, and wh-in situ languages exist that lack question particles, even when wh-in situ is well-formed inside a syntactic island (think about English multiple questions). This means that wh-in situ is not dependent upon the existence of a question particle, and unselective binding is also not dependent upon a question particle.

This means that both theoretical views of question particles that we are aware of are on the wrong track. One says that the question particle in wh-in situ languages is the unselective binder. This is incorrect for the reasons just enumerated: it does not serve this function in Vietnamese, if we are right, and there is no correlation cross-linguistically. The other view is that of Cheng (1991). Cheng proposes that interrogative clauses must be typed syntactically as questions. Typing takes place in one of two ways: either a question particle types the clause as a question, or wh-movement does. This theory predicts complementarity between wh-movement and question particles, but we have just seen that the predicted complementarity does not exist. Cross-linguistically, there is no correlation between wh-in situ and question particles. In Vietnamese, there is complementarity between question particles and (covert) wh-movement in matrix clauses but not in embedded clauses. There is nothing at all to type embedded clauses as questions in Vietnamese. Cheng (1991) hypothesized that a null question particle could serve to type interrogative clauses (in fact, most of the wh-in situ languages that she discussed lack wh-question particles, and only have yes-no question particles), but this is a hypothesis that renders the typing theory almost completely vacuous. If question particles can be null, then the theory makes no predictions about a cross-linguistic correlation between wh-in situ and question particles. The typing theory does still predict that wh-movement languages should lack question particles, but this is false: 70% of the wh-movement languages in Bruening's (to appear) study have question particles.

The data from Vietnamese suggest two new directions in thinking about question particles. Question particles do seem to indicate somehow that a clause is a question, just like subject-auxiliary inversion can in English (but it is hardly plausible that subject-auxiliary inversion is the unselective binder in English wh-in situ). We need a theory of what that might mean in a model of grammar; it cannot be typing in Cheng's sense, and theories that simply put a question feature on Comp or posit a new functional projection just push the explanation back a step. Moreover, question particles also often seem to play a role in other grammatical phenomena, like the Vietnamese particle does in signaling realis mood and inducing a presupposition. We also need a theory of how and why question particles might play that role in addition to indicating that a clause is a question. We cannot come to any satisfactory conclusions on these two issues here but pose them as directions for future work.

Acknowledgement We would like to thank Satoshi Tomioka for his suggestions and positive contributions to this work. We also thank the following Vietnamese consultants: Tôn-nữ Thanh-Thùy, Nguyễn-văn Hiệp, Phạm-anh Tú for their time and patience in response to our questions. Thanks go as well to Nigel Duffield and especially to an anonymous reviewer, whose comments helped improve the paper considerably, and to the audience at NELS (Connecticut, 2004) where an earlier version of this paper was presented, especially Željko Bošković and Norvin Richards. The second author is especially grateful to the Harvard-Yenching Institute for their generous funding during his graduate study at the University of Delaware.

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