Comments on Vacuous Subject Movement[1]

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1   Introduction

In this working paper, I discuss the phenomenon known as VACUOUS SUBJECT MOVEMENT (henceforward also referred to as VSM) in English and the problem posed for VSM by Chomsky's (1986) VACUOUS MOVEMENT HYPOTHESIS (henceforward also referred to as VMH), *ie* the idea that overt *wh*-movement does not take place for *wh*-subjects. I argue that, for both empirical and theory-oriented reasons, *wh*-subjects should be analyzed on a par with *wh*- non-subjects as occupying a different slot (a pre-COMP position, presumably Spec-CP). Though the asymmetry which results from having two separate analyses of *wh*-movement, one for *wh*-subjects and one for *wh*- non-subjects, creates theoretical problems and/or consequences for many of the current theoretical paradigms that deal explicitly with *wh*-phenomena (such as Principles & Parameters (P&P), Head-Driven Phrase Structure Grammar (HPSG), and Optimality Theory (OT)), the present work is theoretically-unaligned and takes into account both generative and non-generative considerations.

As a first step in introducing the data, consider the following examples:

(1)   a.   *Why*$_i$ is Ross always so angry with Rachel t_i?
        b.   *Who*$_i$ did Monica marry t_i.?

(2)   a.   *For what insane reason*$_i$ is Ross always so angry with Rachel t_i?
        b.   *Which of the guys at the coffee house*$_i$ did Monica marry t_i.?

It is obvious in (1) and (2) that the *wh*-clause contains a *wh*-phrase (which may consist of a single *wh*-word as in (1) or may be a larger phrase as in the italicized strings in (2)) in a clause initial, non-canonical position (a so-called 'landing site') that is somehow related to, and coindexed with, an understood position (a so-called 'extraction site', here marked t_i) somewhere else in the clause. Aside from the clear difference between the position of the clause initial *wh*-phrase and the position of the understood functions of these phrases, there is also visible subject-auxiliary[2] inversion (SAI) in (1a) and (2a) and *do*-support in (1b) and (2b).

In contrast to non-subject *wh*-phrases like those in (1) and (2), it is not at all evident from the surface order of the elements in sentences like (3) below whether the *wh*-subject phrases have a movement relationship[3] analogous to their non-subject counterparts:

(3)   a.   *Which of your friends* is always angry with Rachel?
        b.   *Who* married Monica?

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[2]   In accordance with common practice, I include in the category of 'auxiliary' the copular *be* and some uses of the possessive *have*, which usually behaves like a lexical verb, but may occasionally function like an auxiliary.
[3] I prefer to use the term 'movement relationship', which in this study means a relationship between a *wh*-phrase and its understood position. In this sense, movement is understood solely metaphorically, *ie* 'as if the item had been moved from its understood position to another position'.

For all intents and purposes the extraction site and landing site are indistinguishable in (3) and therefore the subject position is often said to involve an unobservable or so-called 'vacuous' movement.

Although vacuous movement of subjects is of great theoretical importance to a linguistic model which posits a universal grammar, it is difficult to know the relevance of the facts or how they can best be applied to a theoretically unaligned description of English. Since it is not my intention in the present work to advocate the use of transformational 'movement' rules, the only real issue I wish to address is whether *wh*-subjects should be analyzed analogously to *wh*- non-subjects as occupying different slot (presumably Spec-CP) than the gap which marks their canonical position, or if they should be analyzed on a par with ordinary subjects, which *are* in the canonical (postcomplementizer, presumably Spec-IP[4]) position and have no concomitant gap.

1.1   Various standpoints on VSM

It is not surprising that in the existing literature on the subject two competing analyses are often presented, one which argues that the *wh*-subject remains in its ordinary non-*wh*- subject slot (Spec-IP) and one which argues that the *wh*-subject occupies a slot different than the non-*wh*- subject slot (Spec-CP).

Chung and McCloskey (1983) argue against vacuous subject movement based on theory-internal assumptions derived from facts about island constraints (see section 2.3.1). They claim that extractions out of clauses with *wh*-subjects are more acceptable since these *wh*-subjects are not really moved into a Spec-CP position, *eg* in the following:

(4)   ***What kinds of gifts**$_i$ are there rules about* [***who** can give t$_i$ to whom?*]

The fronted phrase *what kinds of gifts* can be *wh*-moved since *who* in the subordinate clause is not in a fronted Spec-CP slot and therefore subjacency is not violated.

Chomsky (1986:48-54) approaches the question from the language learner's point of view. In sentences with *wh*-subjects he argues that the child is given no clue about fronting and can therefore interpret the sentence as having the *wh*-constituent in the normal (non-*wh)* subject position. At the end of his discussion Chomsky formulates a VACUOUS MOVEMENT HYPOTHESIS (VMH), according to which fronting of the *wh*- subject is not an obligatory general rule and is assumed by the language learner only when he has overt evidence that such movement has taken place. Considering then a variety of extraction data originally discussed by Chung & McCloskey (1983), Chomsky argues that the facts can be very neatly described by an analysis which assumes no vacuous movement, while he admits at the same time that the data themselves in many cases are not fully clear. In a brief discussion of the question, Haegeman (1994: 574-576) sums up the main points made by Chomsky but concludes that a firm a decision on the issue requires more research on the problems involved.

Clements *et al* (1983) attempt to refute Chomsky's suggestion (Chomsky 1973: 254; Taraldsen (1980), quoted in Clements *et al* 1983: 3) that the concept of vacuous movement is ruled out by a constraint which is part of universal grammar or by a principle applying in the grammar of individual languages. Using cross linguistic evidence from Icelandic, Kikuyu and Irish they show that such a position is unacceptable and that vacuous subject movement must be allowed by the theory of grammar.

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[4] Spec-IP is sometimes referred to in current P&P/minimalist literature as Spec-TP. The technical differences between these two appellations are of no relevance to the present analysis. See Radford 1997: 240-245 for details.

Cheng (1991: 31-32) argues that, in English subject questions, the *wh*-subjects are required to be in Spec-CP to satisfy the CLAUSAL TYPING HYPOTHESIS (CTH). Simply stated, Cheng's CTH is used to explain cross linguistic variation in *wh*-questions, in this case the difference between a *wh*-in situ language like Chinese and an overt *wh*-movement language like English. According to Cheng, English uses overt *wh*-movement to satisfy clausal typing, *ie* C acquires the +WH-feature of the XP in its specifier. The Clausal Typing Hypothesis requires Cheng to assume that subject *wh*-phrases must undergo overt movement in English.

Rizzi's (1991) *wh*-criterion has some similarities to Cheng's CTH in that the *wh*-criterion involves the principle that the inflectional node carrying the WH-feature must move to the Spec-CP in interrogatives to create the required Spec-Head configuration with the *wh*-operator. Rizzi weighs the pros and cons of an analysis in which the *wh*-subject stays in Spec-IP and an analysis in which the *wh*-subject moves to Spec-CP. Both are awkward, but he concludes, for theory internal reasons, that movement to Spec-CP is less problematic than non-movement. He proposes a solution in which the *wh*-criterion is interpreted as requiring that the chain of the relevant X^0 position has the feature +WH and not necessarily the position itself. In other words, in Rizzi's proposed solution the +WH feature is not endowed on the clausal head (C^0), but rather on the head of Infl (I^0) – thus it is lowered to the V. Consequently, agreement is minimally expressed by coindexation; C^0 forms a chain with I^0 and with the lowered inflection containing the +WH (for an expanded discussion of the technical details, see Rizzi 1991).

Grimshaw (1995:16 -17), within the framework of optimality theory, speculates that a *wh*-operator does not necessarily need to occur in the Spec-CP slot, but rather that it is only required to occur in a Spec position from which it c-commands the verbal extended projection. The relevant candidate Spec positions for *wh*-operators are then Spec-VP, Spec-IP and Spec-CP. For non-subject *wh*-phrases, the only possible position is the Spec-CP since both Spec-VP and Spec-IP are already filled (by the subject depending on the presence or absence of an auxiliary). However, for *wh*-subjects, she argues that no movement to Spec-CP is necessary since the *wh*-subject is either in the Spec-IP (when an aux is present) or the Spec-VP (when no auxiliary is present) and in these two situations the relevant Spec position is already the Specifier of the highest phrase in the verbal extended projection.

Radford's (1997: 292-294) discussion repeats the standard argument that the lack of an inverted auxiliary in subject questions casts doubt over the view that the *wh-subject* moves into the Spec-CP position. On the other hand, Radford notes that even on the alternative view, the lack of *wh*-movement and the lack of auxiliary inversion pose problems, and he proposes two or three different ways of dealing with them by appropriate modifications in the application of the theoretical machinery and the general principles assumed within the minimalist approach (see also section 2.2.1 below).

As a representative example of a descriptive grammar that takes up the asymmetries of the *wh*-subject analyses, Huddleston (1984: 395) takes a pragmatic approach to the problem, stating that either analysis can be applied, though the advantage to the vacuous movement analysis is that it allows a unified approach to the form of *wh*-clauses.

A further, more recent attempt to settle the differences between the analyses of movement for *wh*-subjects *vs* movement for *wh*- non subjects has been made by Agbayani (2000). In his analysis it is possible to reconcile the evidence for and against the two analyses by proposing a split treatment of overt *wh*-movement. This so-called split treatment involves that the +WH-feature is moved to the Spec-CP position while the *wh*-subject remains in the Spec-IP slot – because no phonological material would intervene between the +WH-Spec-CP and the *wh*-subject in the Spec-IP, no movement needs to apply to move the *wh*-subject to Spec-CP to satisfy adjacency requirements (adjacency has a significant role in this account, for the specific details, see Agbayani 2000). In this fashion, Agbayani's analysis satisfies the

CTH while at the same time it does not violate the economy principle, which states that syntactic derivations should involve as few grammatical operations as possible.

2   A closer look at the data

So far in this study I have only used examples of independent *wh*-interrogatives, however, there are four basic types of *wh*-clause (see Trotta 2000 for a detailed discussion of *wh*-clause types), which must be considered. Two of these clause types, interrogatives and exclamatives, can occur as both dependent and independent clauses:

		dependent:	independent:
(5)	**interrogative**:	I don't know *who* was present.	Who was present?
(6)	**exclamative:**	You won't believe *what* strange people were on the tram today.	What strange people were on the tram today!
(7)	**free relative:**	He threw *what* was left of the cheesecake at the dog.	--
(8)	**bound relative**:	The author *who* wrote the novel *Fight Club* has a long last name.	--

Since the facts concerning the central question in this study differ slightly for each clause type, and also because the variation between the dependent and independent clause require special treatment, I choose to structure the discussion below by first focusing on the dependent clauses in section (2.1) and moving on to the independent clauses in section (2.2).

2.1   Dependent *wh*-clauses

As the dependent *wh*-clauses in sentences in (5) to (8) stand, there is no overt evidence to indicate that the *wh*-subjects occupy a pre-COMP (Spec-CP) slot and all could, in principle, be said to be in the same syntactic slot that any ordinary subject would occupy, *ie* post-S (Spec-IP), such as *Mary* in *Mary killed the rat*.

The first piece of evidence for a VSM analysis comes from facts about echo questions. In the transformational school, *wh*-echo questions have sometimes been used as a way of supporting the claim that the S-structure position of *wh*-items differs from the D-structure position of these same items (*cf* Radford 1988: 467-468, see also Haegeman & Guéron 1999: 524-526) :

(9)   a.   My father will put the Mercedes in the garage.
      b.   Your father will put [*which car*] in the garage?   (echo)

      c.   [*Which car*] will your father put in the garage?   (non-echo)

The typical position of the syntactic function of the *wh*-XP (here direct object of *put*) is indicated by the position of this item in its echo-question counterpart. Compare now the echo and non-echo versions of the subordinate interrogatives with *wh*-subjects in (10b-c) below:

(10) a.   Bill didn't say *that/whether/if* John would arrive first
      b.   Bill didn't say *that/whether/if **who*** would arrive first?   (echo)
      c.   Bill didn't say (**that/*whether/*if*) **who** would arrive first.   (non-echo)

The grammaticality of the insertion of a complementizer (*that/whether/if*) in (10b) and the ungrammaticality of the non-echo version of this sentence in (10c) is a powerful indication that the *wh*-subject + predicate string is different in a very real way from the non-*wh* subject + predicate string. It would then seem reasonable to consider the echo-question position as the 'extraction site' and the non-echo question position as the 'landing site' – entailing a movement relationship (albeit vacuous) between the two positions.

The only shortcoming with evidence from echo questions is that, by its very nature, it can only be used to argue for a VMS analysis for dependent interrogatives. For the other *wh*-clause types, it is necessary to find verification from other sources.

The second piece of evidence for a pre-COMP position for *wh*-subjects in dependent clauses comes from attested examples of the *wh-* + *that* pattern in modern English (see Seppänen & Trotta 2000 for a full discussion, see also Henry 1995 for a discussion of *wh-* + *that* in Belfast English). The reasoning I wish to invoke here is that if it is possible to insert a complementizer *that* after the *wh*-subject, then an argument for a pre-COMP position is substantially strengthened. Consider now the following examples in (11), (12) and (13), taken Seppänen & Trotta (2000) and Trotta (2000:85, 116, 144):

(11) a.   It'll probably be evident from the field *which of the players **that** Δ* are feeling the heat most. (cited in Radford 1988: 500)

     b.   I wonder if he could describe to us *what influence **that** Δ* has been brought to bear on the the [*sic*] overall calculation? (bnc JAC 367 364)

     c.   Yeah. Erm we owned a little and just thought I'd ask the party see *how many things **that** Δ* cropped up as a result John! (bnc KDW 7074 246)

(12) Your nan's being rude It's surprising how it's surprising *how much stuff **that*** collects under there isn't it? (bnc KCC 510 158)

(13) a.   …everything is being done to see that *whatever attempts **that** Δ are made on the whereabouts of its disclosures* will be judged by their predicament and a positive answer will be prepared. (bnc EUY 650 364)

     b.   Suddenly, an enormously large and dark shape blocked out *what little light **that** Δ remained at depth*. (bnc FBR 67 357)

     c.   Investors have been expecting *whatever government **that** Δ emerges from the general elections on June 6th* to lower interest rates and devalue the peseta, in order to revive Spain's flagging economy. (bnc CR7 2749 305)

     d.   Life in Turtle Ridge was quiet and uneventful for Autumn. *What excitement **that** Δ did arise was usually of her own making, and Δ always brought new waves of gossip*. (CDC ukbooks/08. Text: B115)

Example (11) shows the *wh-* + *that* pattern with subordinated *wh*-interrogatives, (12) shows the same pattern for exclamatives and (13) exemplifies free relatives. It should be noted that the paucity of attested examples for exclamatives (12) is only to be expected owing to the rarity of *wh*-subjects in exclamatives, the overall infrequency of the clause type itself, and the peripheral nature of the *wh-* + *that* pattern (see Trotta 2000: 115-116).

It could also be argued that an interrogative interpretation of (12) cannot be completely ruled out and therefore this example may indeed say nothing about the *wh-* + *that* pattern, and consequently nothing about the status of VSM in exclamatives. In order to see if forcing an

exclamative interpretation changes the grammaticality of (12), variations of this example were presented to native speaker informants as (14):

(14) a.   It's surprising *what an incredible amount of stuff **that*** collects under there isn't it?
      b.   It surprising *how very many things **that*** can collect under there, isn't it?
      c.   It surprising *how very much stuff **that*** can collect under there, isn't it?

Although several informants commented that they felt the insertion of *that* was superfluous, they did not reject the examples as ungrammatical, nor did they feel that the examples in (14) were worse that in (12).

Even though some of the examples in (11) through (13) are spoken and therefore represent a more informal style, they show that a complex *wh*-subject can be separated from the following clause with an intervening complementizer *that*, further substantiating the claim that *wh*- and non-*wh*-subjects occupy different syntactic slots.

Having examined the *wh*- + *that* pattern for dependent interrogatives, exclamatives and free relatives, the next issue to resolve is whether this same evidence can be used to make any claims about the status of VSM in bound relative clauses. Interestingly enough, bound relatives are different than any of the other types of *wh*-clauses so far discussed in that, although several examples of a *wh*- + *that* string are found in the larger corpora, only one is accepted by at least some of my native informants:

(15) (*?) The main question the novel poses is how we know, remember or invent the past. Philip Hayley, the main character of the novel, undertakes an excavation of the life of his charlatan father, *around whose numerous exploits **that*** the plot revolves. (bnc G1N 254 197)

This is in contrast to the overall acceptability of the *wh*- + *that* pattern in other clause types (with certain prerequisites, see Seppänen & Trotta (2000)). The obvious question is then: What is the significance of this finding for the analysis of the position of the fronted *wh*-XPs in bound relatives? If no element which marks off the clause boundary can be inserted after the *wh*-XPs in this clause type, should clause initial *wh*-items be considered pre-COMP or not? Without the help of the *wh*- + *that* pattern in bound relatives, is there any evidence to support an analysis of the syntactic position of these items as different than their non-*wh*- subject counterparts?

I believe that evidence of such a nature can be derived from facts about adverbial placement in English. The adverbial slot between the subject and verb, referred to by Quirk *et al* (1985: 490-495) as either *M* (medial position) or *iM* (a position between initial and medial), depending on the presence of an auxiliary[5] can easily be occupied by certain adverbials, usually indicating modality or degree as in (16):

(16) a.   I *really* haven't had a chance to see it.
      b.   You *probably* want to ask a specialist about that.
      c.   John *usually* leaves messages for me on my computer.

In regard to the structure of such *(i)M* adverbials, Quirk *et al* (1985: 493) state that 'Only for a heavily special effect would a clause or lengthy prepositional phrase be placed at *M* (and then it would be clearly marked off by commas in writing or by prosody in speech).' Later

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[5] These positions are not exactly the same but are similar enough for the present purposes to be conflated into one, see Quirk *et al* (1985: 490-495) for details on each position.

the authors go on to say 'In more general use, the adverbials at *M* are for the most part rather short adverb phrases, especially solitary adverbs…'. Here we find a crucial difference between the word order in bound relatives and ordinary non-*wh*-clauses on this point, as is shown in the following (the adverbials in each example should be read with an unmarked intonation, *ie* with *no* separate tone unit for the underlined segments):

(17) a. Had More's writings been wholly limited to such exercises, they would be almost as dimly remembered as those of a dozen or so other authors living in his time, whose works tenuously survive in the minds of the few hundred scholars **who** each decade in pursuit of their very specialized occasions read those works. (BUC J57:16)
(*cf* *?Scholars each decade in pursuit of their very specialized occasions read those works.)

  b. The other, of course, was the Civil War, the conflict **which** a century ago insured national unity over fragmentation. (BUC G02:26)
(*cf* *?That conflict a century ago insured national unity….)[6]

  c. At this time Harriet wrote in a letter **which** after their finally landing in India was sent to her mother: "I care not how soon we reach Calcutta, and are placed in a still room, with a bowl of milk and a loaf of Indian bread. (BUC G37:29)
(*cf* *The letter after their finally landing in India was sent…)

The long (or 'heavy') adverbials in the bound relative sentences can follow the *wh*-subjects without any special intonation, whereas the adverbial in the non-*wh*-versions, if they are at all acceptable, must be read with a particular 'parenthetical' intonation in a separate tone unit. The fact that the *wh*-element must precede any other (non-topicalized) clause element overrides the normal rules of unmarked word order and certainly makes them different than non-*wh*- subjects (see also Haegeman & Guéron 1999: 346 who use a similar argument to show which slot fronted *wh*-items in relative clauses occupy in their 'split-CP' analysis, missing the fact that this same argument can be used to show that *wh*-subjects are not in the canonical subject position).

Stated succinctly, the virtual ban on *wh*- + *that* strings in bound relatives indicates that this clause type may deviate from the normal pattern of pre-COMP *wh*-XP + clause/XP and may imply a structural position for fronted *wh*-element different to that of other fronted *wh*-XPs. However, regardless of the exact landing site of *wh*-elements in bound relatives, which may or may not be pre-COMP, the *wh*-subjects here are still in a structural position which differs from that of ordinary, non-*wh*- subjects and can therefore still be considered fronted elements, regardless of whether they remain inside the clause boundary or not.

2.2 Independent *wh*-clauses

The question which remains is whether or not there is evidence to support the assertion that even main-clause *wh*-subjects occupy a different position than their non-*wh*- subject counterparts. I start the discussion by examining independent *wh*-interrogatives in 2.2.1 and then continue to some comments on *do*-support in 2.2.2, then conclude this section with *wh*-exclamatives in section 2.2.3.

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[6] *A century ago* is not intended to be construed as a postmodifier of *conflict*.

2.2.1 *Independent* wh-*interrogatives*

Consider the schemes presented below in (18) and (19), which show the relevant positions and movement relationships that can be assumed for fronted *wh*-XPs and auxiliaries.

(18) **pre-COMP slot   COMP slot (remainder of sentence)**

	pre-COMP slot	COMP slot					(remainder of sentence)
a.	Which movies$_y$	will$_i$	you	Δ_i	watch	Δ_y	at the festival?
b.	Which film$_y$	might$_i$	he	Δ_i	award	Δ_y	the first prize?
c.	How successful$_y$	can$_i$	it	Δ_i	be	Δ_y	in schools?
d.	What$_y$	would$_i$	they	Δ_i	call it	Δ_y	in France?
e.	Where$_y$	did$_i$	she	Δ_i	live	Δ_y	last year?

(19) **pre-COMP slot   COMP slot (remainder of sentence)**

	pre-COMP slot	COMP slot				(remainder of sentence)
a.	Which child$_y$	has$_i$	Δ_y	Δ_i	left	their umbrella behind?
b.	Which movies$_y$	are$_i$	Δ_y	Δ_i	playing	in the cinema right now?
c.	What$_y$	is$_i$	Δ_y	Δ_i	--	the problem?

In terms of the structural position of the subject which I am advocating, the positions of the *wh*-subject and auxiliary follow exactly the same scheme as shown in in (18) for *wh*- non subjects, the crucial difference being that the reordering of the elements involved is neutralized (*ie* there is a convergence of forms) as is shown in (19) resulting in a linear sequence identical to the one before reordering.[7]

Having so far avoided drawing in the use of dummy *do,* I now attempt to deal with this auxiliary as observations about its presence or absence have been the basis of the most common arguments against the VSM analysis advocated here. The standard question has been, how could a sentence like *Who says so?* have a subject in the fronted position when it shows no inversion and no dummy *do* (Chomsky 1986: 48-54; Radford 1997: 292-294)? Consider once again the relevant forms, this time compared with SAI in non-*wh*-clauses:

(20)	a.	Should we leave?	non-*wh*- SAI
	b.	Do you want to leave?	non-*wh*- *do*-support
	c.	Who can/will/etc you trust now?	SAI
	d.	Who ***do*** you trust now?	*do*-support
	e.	Who can/will/etc trust you now?	neutralized inversion
	f.	Who trusts you now?	no *do*-support

Of the six examples in (20), (20b) and (20d) agree in introducing *do* when no other auxiliary is present but (20f) does not. The standard assumptions are that *wh*-movement is always accompanied by head movement of the auxiliary from I to C (for a textbook account, see for example Radford 1997: 267-271) and that *do*-support supplies an auxiliary when no auxiliary is available. To answer the question of why *do*-support does not apply to cases like the one in (20f), it would first be helpful to examine the question of why *wh*-movement is assumed to be

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[7] Traditional and modern grammarians have sometimes handled this case by means of an extra stipulation which states that the necessity of the initial position for the *wh*-item overrides any inversion rule (*cf* Chomsky 1957: 69-71, Quirk *et al* 1985: 818).

accompanied by head movement of I to C in the first place and subsequently how *do*-support is said to remedy the situation.

Stated concisely, the explanation generally given in minimalist theory is that C (COMP) in questions is a so-called 'strong' head which must be filled and that strong heads (strong features) can trigger movement. Dummy *do* is used only to satisfy some grammatical requirement (here the need to fill the strong COMP) which otherwise would not be satisfied. The fact that we do not have **Who did help you* ? (with an unstressed *do)* is the basis of rejecting the scheme proposed in (19) for (20f) and in this situation and positing a different structure to replace it. In actual fact, two different solutions have been proposed for this case, one by Chomsky (1995: 293), referred to as the 'interrogative head analysis', and one by Grimshaw (unpublished, in Radford 1997: 294), referred to as the 'interrogative specifier analysis'. Each analysis involves a departure from the descriptive machinery postulated elsewhere for *wh*-movement and each differs in how much they deviate from the structure of other *wh*-clauses.

In the interrogative head analysis, the *wh*-subject remains in the Spec-IP slot, leaving the problem of how such a structure can be interpreted as a question if the strong affix Q under the C node is left unchecked. Thus the central minimalist concern of feature checking, normally achieved by movement or merger, now requires a third type of checking (by attraction), which is apparently not needed anywhere else. Furthermore, to exclude the generation of **Who did help you?* an additional stipulation is introduced to guarantee that in this particular case the COMP is in fact not strong and therefore does not require the introduction of the auxiliary *do*.

The 'interrogative specifier analysis' is predicated on the idea that the defining characteristic of an interrogative clause is that it contains an interrogative specifier. Thus examples like (20c-e) all project into a CP with the *wh*-subject in Spec-CP, but (20f) remains as an IP. With the Spec-IP slot filled by an interrogative specifier, the requirement for a question to contain an interrogative specifier is satisfied and there is no need to project to a CP (*cf* Radford 1997: 292-294).[8] However, as Agbayni indicates (2000:704n), an analysis which leaves the *wh*-subject in the Spec-IP position is problematic for theory internal reasons. He points out that in such a view, the numeration from which a *wh*-subject question is built must not contain C. This means that the choice not to select C for the numeration must be based on the eventual output of the derivation, thus involving a so-called 'look ahead' property. Collins (1997) and Chomsky (1998) (both cited in Agbayani 2000: 704n) propose that 'look ahead' should be avoided in favor of local determination of economy, *ie* because of assumed economy conditions, locally determined solutions are more attractive than solutions based on comparing the numerations of alternative convergent derivations.

It is worthwhile to note at this point that the methods developed for dealing with the lack of dummy *do* are costly in terms of the descriptive machinery required. More importantly, it is doubtful whether the approaches are even then capable of handling the data in terms of descriptive adequacy. To see the problem here, recall that the separate descriptions are only applied to main clauses not to embedded clauses. For this latter case, Radford 1997:286-291 points out, on the contrary, that these clauses are CPs with an null complementizer, *ie* they have the very structure which I have assumed all along in this discussion, although the overt complementizer *that,* shown in (11) to (13), must be added to Radford's account.

There may, however, be an alternative explanation as to why no *do*-support occurs in sentences like (20f). This speculative explanation hinges on two assumptions:

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[8] This view is modified slightly in Grimshaw 1995 in that the *wh*-subject in sentences with an auxiliary are not in Spec-CP but rather Spec-IP and *wh*-subjects in sentences with no auxiliary are in Spec-VP.

i) whereas *do* makes a significant semantic contribution to *yes/no* questions by marking the illocutionary force of these utterances, it is not clear whether *do* has exactly the same function in *wh*-questions

ii) a relevant factor which triggers *do*-support independent *wh*-questions is the linear order of the actual items which fill the slots between the fronted *wh*-XP (Spec-CP) and the lexical verb (V^0). In other words, as Rizzi (1991) mentions, word order in independent *wh*-interrogatives is a case of residual V-2.[9]

Consider first the order of the elements in (20): in the first four cases the auxiliary precedes the subject, intervening between it and the fronted *wh*-XP when necessary (as in 20c & d). In addition, the subjects in (20a-d) intervene between the auxiliary and the lexical verb. In 20e, an auxiliary intervenes between the subject (*who*) and the lexical verb (*trust*).

Without *do*-support in (20b), the sentence would not have the correct illocutionary force for a question, *ie* the strong COMP must be filled in order for (20b) to function as a question since there would otherwise be no way to interpret this sentence as such. This means that I must move to C; if the I node dominates an auxiliary, the procedure is simple. If, however there is no auxiliary under I, then I to C movement would move only the features TENSE/AGREEMENT to the left of subject, with the lexical verb remaining to the right of the subject, rendering an ungrammatical sentence. Thus, *do*-support is necessary in order to host the tense and agreement features which must necessarily be moved to a pre-subject position in *yes/no* questions.

If we suppose that the minimalist approach is correct in assuming that the strong COMP must be filled in *wh*-questions in a way comparable to the analogous procedure in *yes/no* questions, then we have a similar explanation for *do*-support in sentences like (20d), I to C movement takes place and *do*-support is once again necessary to host the tense and agreement features that would, given these circumstances, precede the subject. But the issue of why the strong COMP should remained unfilled in *wh*-subject interrogatives remains unanswered.

An argument could be mounted, however, that unlike *do*-support in *yes/no* questions, I to C movement takes place not for the sake of establishing the correct illocutionary force of the sentence, but rather it is the fronted *wh*-XP which marks the illocutionary force of *wh*-questions and that I to C movement is the result of other factors, presumably the need to maintain the residual V-2 word order of independent *wh*-interrogatives. This is not to say that I to C movement does not contribute to the illocutionary force of *wh*-questions in some way, but its main purpose could simply be to prevent a linear sequence in which the fronted *wh*-XP immediately precedes the subject, which in turn would precede the lexical verb. If this is indeed the correct scenario, then *do*-support would only be necessary for fronted *wh*- non-subjects since in these cases there would indeed be intervening phonological material (*ie* the subject) between the TENSE/AGREEMENT features (now in C as a result of I to C movement) and the lexical verb (which remains in V^0).

Consider again the situation in independent *wh*-subject questions. Since the fronted *wh*-XP is the subject, then obviously there is no linear string in which the *wh*-XP immediately precedes the subject phrase (as is the case in 20c & d) causing a disruption in the seemingly necessary V-2 word order. Thus the lack of *do*-support in *wh*-subject interrogatives could have two possible explanations:

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[9] By 'residual V-2', Rizzi means 'construction-specific manifestations of I to C movement in a language [...] which does not generalize the V-2 order to main declarative clauses' (Rizzi 1991).

i) COMP is only strong in independent *wh*-interrogatives when it is necessary to maintain a V-2 word order, otherwise it is weak and does not trigger movement[10] or

ii) even if the TENSE/AGREEMENT features under I are moved to C because a strong COMP calls for this, there is no phonological material which can block an agreement relation between C^0 and I^0 and I^0 and V^0 and thus *do*-support is not required[11]

In other words, if *do*-support were to be used in (20f) it would make no contribution to the meaning of the sentence and it would unnecessarily interrupt the phonological adjacency between the TENSE/AGREEMENT features and the main verb. Thus it would be semantically superfluous and also excessive in terms of what is required for a grammatical, interrogative sentence. This is completely in line with the general observation about *do*-support that it has a 'last resort' quality to it, *ie* it only takes place if it must and if a sentence is good without *do*-support, it simply is not used. Furthermore, dealing with the use of *do* in these simple terms is also in basic agreement with what was presented in early transformational literature (Chomsky 1957: 69-71) and is found today in some descriptive grammars (Quirk et a11985: 818).

As a last comment on this section, it is worthwhile to examine the problem from the point of view of a recent innovation in the minimalist program, namely the probe/goal matching system proposed by Chomsky (2000). In this system, the *wh*-phrase (the goal) contains an interpretable feature [Q] that agrees with the uninterpretable [Q] feature of the complementiser C (the probe). The goal also contains an uninterpretable +WH-feature that is erased together with the [Q] feature of the probe once the goal has moved to Spec-CP. However, this only involves movement if C also has a selectional uninterpretable feature EPP (Extended Projection Principle); this feature requires that something be merged with the category that C heads (*ie* in Spec-CP). The question then is if the presence of an EPP-feature should depend on whether the moving element is a subject phrase or a non-subject phrase. If we want the simplest, most uniform analysis which can account for the data, then it seems reasonable to argue that the C node in English has an EPP feature which requires that something must be merged in Spec-CP and if the phrase determined by the closest matching goal is the *wh*-subject phrase, then so be it.[12] However, a detailed examination of the consequences/implications of such an account in the probe/goal matching system is beyond the scope of the present paper an will have to remain a question for further research.

2.2.2 *A further note on the lack of* do*-support in main clause interrogatives*

The comments provided in section (2.2.1) above provide a sufficiently adequate, fully plausible explanation as to the lack of *do*-support for *wh*-subjects in auxiliary-less, independent *wh*-interrogatives. In this small section, I present further comments on the matter which are relevant in this context.

Firstly, it is interesting to note the word order of examples such as the following:

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[10] If this explanation were correct, it would require some adjustment to the idea that if an aux is present in a *wh*-subject question, then that aux is moved to C as in (19). However, I do not see that type of adjustment causing any major obstacles to the main argument in this paper, namely that the *wh*-subject is not in the canonical subject position.

[11] Certain adverbials, like *always* (eg *Who **always** leaves crumbs on the table?*) may intervene, but these adverbials do not ordinarily block agreement between I^0 and V^0, (eg *John **always** leaves crumbs on the table*), thus this is not a phenomenon that must be explained because of the proposed analysis here, but is a rather a general fact of syntax.

[12] I would like to acknowledge the help of Satu Manninen for bringing this argument to my attention.

(21) a.   Not until yesterday did I understand the meaning of the poem.
    b.   Not only Rachel did Ross like, but he liked Mona too.
    c.   Not only Ross liked Rachel, but Mona liked her too.
    d.   *Not only Ross did like Rachel, but Mona liked her too.

As is the case with independent *wh*-interrogatives, sentences with an initial negative or restrictive element have a 'V2 quality' to them. In other words, in sentences beginning with an initial negative or restrictive element, SAI is triggered[13], and, like the examples in (21a & b), if no aux is present, the dummy *do* is introduced. If the initial negative element is the subject as in (21c), then we get a situation remarkably similar to that of *wh*-subjects in independent interrogatives, *ie do*-support is not allowed (*cf* 21d), presumably since it is superfluous.

Negative inversion provides independent justification for the analysis provided in 2.2.1, *ie* since i) SAI/*do*-support occurs in negative inversion, but clearly not in order to mark the clause type or illocutionary force of the utterance and ii) if the same type of V-2 principle applies here (one which makes use of SAI to maintain the V-2 word order), then there is an independent reason for appealing to such an account of the facts and the argument is strengthened.

As a final note on *do*-support, it should be kept in mind that SAI is not always apparent with fronted, non-subject *wh*-XPs (*cf* Quirk *et al* 1985: 899):

(22) a.   "***How*** you going to work with a child hanging on you" ⟨informal⟩ (BUC K28:53)
    b.   '***Where*** you goin' son?' asked Mum. ⟨informal⟩ (LOB K25: 158)
    c.   ***What*** you going to say, Betty? ***What*** you going to tell him? ⟨informal⟩ (Dennis Potter, *The Singing Detective*, p 130)

In spoken language, the *you* in all the examples in (22) would be reduced to '*ya*' and the '*what-you*' combination is regularly reduced to '*whatcha*'. Obviously, in standard English the 'missing' auxiliaries are most easily explained as the result of ellipsis. However, following the same logic that is sometimes used in P&P as regards the '*wanna*' contraction argument (see Radford 1988: 475-476, 1997: 269), the regular contraction of *what you* to *whatcha* would indicate that in informal dialects which use these forms, there may not be a gap which marks the place of a 'missing' auxiliary, implying that no auxiliary has been moved or deleted. Though the evidence here is marginal and reflects dialect- or style-specific variation, the main point which I wish to make with these examples is simple: it obviously does not follow that, because there is no overt SAI here, the *wh*-XPs in (22) are *not* fronted. In addition, examples like those in (22) show that the presence of the *wh*-XP in the Spec-CP slot is in fact sufficient to mark the clause type or illocutionary force of a *wh*-question, the presence of an Aux or *do* in COMP is only of ancillary importance in this matter.

2.2.3 Independent wh-*exclamatives*

Moving on then from interrogatives to exclamatives, the subject position again poses special problems for a uniform account of *wh*-movement. It is important in this context to keep in mind those principles of *wh*-clauses which all *wh*-clauses share while at the same time

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[13] According to Haegeman & Guéron (1999: 333-338), it is not clear whether this 'negative' inversion involves I to C movement. However, the exact details are not relevant for the issue at hand, the important movement in this context is SAI, which renders the desired sequence regardless of whether or not it involves I to C movement.

remembering that there are specific phenomena which distinguish *wh*-clause types. In the present case, the state of affairs for exclamatives is different than that for interrogatives in that no SAI is required for non-subject *wh*-XPs in exclamatives (see Trotta 2000: 110-111):

(23) a. *What a nice time* we will have in Barbados!
     b. *What terrible songs* they were playing last night!
     c. *How silly* you must think I am!

Nor is *do*-support necessary in analogous cases without auxiliaries:

(24) a. *What an interesting shop* I found today!
     b. *What strange songs* they played last night!
     c. *How silly* he thinks I am!

This may give the impression that *wh*-exclamatives do not exhibit *wh*-movement at all, but are rather instances of topicalization (see Trotta 2000: 111) which also do not require SAI. However, this would be a simplification of the facts because *wh*-exclamatives and topicalized sentences differ on several points; the crucial difference is that fronting the *wh*-XP in exclamatives is always obligatory, whereas topicalization is always optional. Compare the following examples:

(25) He invited { a. *so many people* } to the party!
                    a'. **how many people*

     He wore { b. *such a loud shirt* } to the wedding!
                 b'. **what a loud shirt*

     She invents { b. *such crazy stories*!
                     c'. **what crazy stories*!

The *so/such* phrases in (25a-c) may remain in their ordinary, canonical position, whereas the analogous *wh*-versions of these sentences (25a'-c') are ungrammatical with a non-fronted element.

Another important point in this context is that SAI may occasionally be employed in main or subordinate *wh*-exclamatives[14], but this word order is rare and generally occurs only in literary English (see Scheurweghs 1959: 310; Huddleston 1984: 373-374; Quirk *et al* 1985: 834):

(26) a. The calmness and detachment of his tone suggested unawareness of *how implicit* <u>was his own guilt</u> in the words he had used to defend Cromwell. (BUC P07:113)
     b. Two things are notable about such state laws: first, how intrusive they are, and, second, *how vague* <u>is the language</u> in which they are couched. (Bryson, *Made in America*, p 373)

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[14] Huddleston (1984: 373) states that this is only possible with *how*-exclamatives while Quirk *et al* (1985: 834) present an example with a *what*-clause: *What magnificent characters does she present in her latest novel!* My informants have mixed reactions to inversion in *what*-exclamatives, but most do not reject them totally, whereas inverted *how*-exclamatives are accepted without hesitation.

c. Call me a perennial Iowa farmboy, but I never fail to be impressed by *how densely packed with worthies* <u>is this little island</u>. (Bryson, *Notes from a Small Island*, p 160)

Because of the possibility of this type of inversion, the *wh*-XP is best seen as occupying the Spec-CP slot in a way which is parallel to *wh*-XPs in other *wh*-clause types.

Finally, some evidence for the VSM for main clause exclamatives may be derived from the fact that, in contrast to interrogatives, *do*-support (with an unstressed *do*) may apply in the case of main-clause exclamatives with *wh*-subjects as in (27):

(27) a. *How many strange ideas* do frequently fly into his head.
 b. *What ill-behaved people* do sometimes roam the streets after football matches.

There is, however, a difficulty in using this argument with full confidence since the status of the *do* as an emphatic form in examples like these is not entirely clear.

Despite the clause-type idiosyncrasies of *wh*-exclamatives, *wh*-movement for *wh*-XP in exclamatives seems analogous to *wh*-movement to other *wh*-clause types as regards the relevant points and thus the VSM should, in principle, be as applicable here as in the other clause types. From this discussion it is clear that if the lack of subject-auxiliary movement or *do*-support for non-subjects does not exclude their placement in Spec-CP, then these facts should not exclude the VSM analysis. Additionally, sentences like those in (27) provide some support, albeit weak, in favor of VSM in main clause exclamatives.

2.3   Some remaining arguments against VSM

I now return two other alleged arguments against movement for *wh*-subjects, in section (2.3.1) I deal with arguments against VSM based on the so-called *wh*-island constraint and in (2.3.2) I turn to arguments based on language acquisition and the language learner.

2.3.1   Island constraints

The position put forth by Chung and McCloskey (1983) against VSM stems from one of Ross's well-known and much discussed 'Island Contraints', namely the *wh*-island constraint (Ross 1986:145-157) which states that extraction from a clause which already contains a fronted *wh*-item is ungrammatical (see also Haegeman 1994: 492-494 for a more recent generative account). Chung and McCloskey argue that *wh*-subjects are not really moved into a Spec-CP position because extractions out of clauses with *wh*-subjects are more acceptable than extractions out of clauses with *wh*- non-subjects. Consider again example (4), repeated below as (28):

(28) **What kinds of gifts**$_i$ *are there rules about* [**who** *can give t$_i$ to whom?*]

What (28) supposedly shows, according to this view, is that the fronted phrase *what kinds of gifts* can be *wh*-moved since *who* is not in a fronted slot and therefore subjacency is not violated.

I have three comments/objections to this argument. The first is quite simple and straightforward: the fact of the matter is that it is not exactly clear that the examples cited by Chung and McCloskey are actually accepted by all speakers (*cf* Pollard & Sag 1994: 225).

Secondly, for those who do in fact accept this kind of construction, it could simply be the case that this acceptability derives from basic facts about multiple-*wh*-items (see Trotta

2000:74-77). The specific point here is that the ordinary situation with multiple *wh*-items is that only one of the *wh*-items actually occurs in a Spec-CP slot – the remaining *wh*-items remain *in situ* as in *Who said what to whom*? If the speakers who find (28) acceptable see the *wh*-subject *who* in the subordinate clause as remaining *in situ*, then these examples say nothing about the status of movement for *wh*-subjects – no extra explanation for this phenomena needs to be given and the VSM does not need to be adjusted since it does not apply in this case.

Thirdly, the fact that many speakers do not accept sentences like (28) has lead to some speculation as to the status of the *wh*-subject in the subordinate clause. It is interesting to note in this context that even transformationalists who advocate a non-fronted subject for the S-structure of a sentence like (28) find it necessary in such examples to posit a movement to a pre-complementizer position on the level of logical form in order to account for syntactic relationships such as island constraints or ECP violations (see Chomsky 1986: 49). From the point of view of the present study, it is not clear that a movement relationship in logical form (a movement which takes place at a level of abstraction which is difficult to confirm or refute with theoretically-unaligned argumentation) in any way provides a simpler, more elegant account of the facts. All things being equal, a VSM analysis deals with the data without the necessity of extra stipulations or explanations.

2.3.2   The language learner

As far as Chomsky's (1986b: 48-54) seminal discussion of vacuous subject movement is concerned, his premise that 'the language learner assumes that there is syntactic movement only where there is overt evidence for it' (p 50) seems to me to be a peculiar supposition since it implies that these learners ignore evidence from other analogous types of movement which would lead them to a different (tacit) treatment of the structure in question. If language learners drew the conclusion that no movement relationship exists in examples like (20f), then there is no way of accounting for the tacit knowledge speakers have that *wh*-subjects are not on a par with non-*wh*-subjects in subordinate clauses (*cf* the different syntax of the echo/non-echo questions shown in (9)).

In other words, as regards evidence concerning language acquisition, it is clear that competent speakers of English can produce any number of sentences of the following pattern:

(29)   a.   *Who*$_i$ do you think t_i will be at the party?
       b.   *How many angels*$_i$ did he say that they agreed t_i could dance on the head of a pin?
       c.   *What factors*$_i$ will she say t_i have an effect on the result?

If language learners tacitly deduced that subject movement does not occur in examples like those in (20f), this would entail that the subject position in main clauses involves an exception to an otherwise uniform pattern. If this really were a genuine exception which is internalized by speakers during language acquisition, they would have no basis to believe that *wh*-subjects can enter into other movement relationships in main clauses (such as long movement in (29)), which are analogous in every relevant way to non-subject positions.

3   Summary and conclusion

In the preceding discussion I have shown that there is considerable evidence that *wh*-subjects in all four kinds of dependent *wh*-clauses occupy a slot, (presumably Spec-CP, though the exact position is not completely obvious in the case of *wh*-bound relatives), which is different

from non-*wh-* subjects. This evidence is derived from facts about echo-questions, the *wh-* + that pattern and the placement of adverbials in bound relative clauses.

For *wh*-subjects in main clauses, there is no empirical evidence, nor in principle any theoretical consideration, which necessarily contradicts a view of a moved *wh*-subject. In fact, the situation is reversed – all things considered, a VSM analysis is more attractive than the VMH for several significant reasons.

Firstly, the alternative approaches to VSM (found, for example in Chomsky 1986, Grimshaw 1995, Radford 1997 and Agbayani 2000) in which *wh*-subjects remain in situ appear to be dead end: they do not offer a satisfactory solution to the problem which they are assumed to solve, and are even more generally incapable of accommodating all the relevant facts of English usage. Used as an argument for distinguishing *wh*-subject clauses structurally from other *wh*-clauses, they are therefore devoid of force. As regards the most difficult case, *ie* the lack of *do*-support for some main clause *wh*-interrogatives, I have offered a tentative explanation which adequately accounts for this asymmetry. How the rules of *do*-support might be approached more satisfactorily within minimalist and/or optimality theory is a question which is not my concern in this study, though it appears to me that the approach to *do*-support advocated here is perfectly amenable with either paradigm.

Secondly, a VSM analysis accounts for the island constraints discussed in 2.3.1 for those speakers who find examples like (27) unacceptable. The idea that the *wh*-movement in this case must take place at LF seems to add an additional complication which is avoided in the VSM analysis.

Thirdly, VSM leaves Rizzi's (1991) *Wh*-criterion and Cheng's (1991) Clause Type Hypothesis in tact and requires no extra rules to account for *wh*-subjects in interrogatives.

Finally, a VSM analysis provides a uniform account of all *wh*-clause types as having the same structural pattern, both in dependent and independent clauses. From the point of view of the language learner, despite Chomsky's (1986) discussion to the contrary, the uniform account of the principles and processes *wh*-movement for subjects which is maintained in the VSM must without doubt be considered the more attractive alternative. From the point of view of economy of description, the VSM is surely to be favored over alternative positions since they must necessarily advocate unwieldy exceptions which subsequently require the introduction of excessive and wholly avoidable theoretical machinery.

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SOURCES OF EXAMPLES

I   **CORPORA** (abbreviations used in text in bold face)

BUC – The Brown University Corpus. For information on the BUC, see Kuc&era & Francis (1967); Francis & Kuc&era (1979)
LOB – The Lancaster-Oslo/Bergen Corpus. For information on the LOB corpus, see Johansson *et al* (1978)
BNC – The British National Corpus. For information on the BNC, see Burnard (1995); Aston & Burnard (1996)
CDC – The Cobuild*Direct* Corpus. For information on the CDC, see Sinclair (1987)

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