

## ***How Come* and other Adjunct *Wh*-phrases: A Cross-linguistic Perspective<sup>\*</sup>**

Masao Ochi  
*Osaka University*

This paper investigates three types of adjunct *wh*-phrases for asking reasons: (a) *how come* in English, (b) *why the hell*, and (c) *what* for asking reasons (found in a few languages). We demonstrate that they share several restrictions. First, they cannot establish a long-distance dependency. Second, they cannot occur in multiple *wh*-questions. Third, they cannot scopally interact with quantifiers. We develop a unified analysis of these adjunct *wh*-phrases, utilizing feature strength in the sense of Chomsky (1995: chapter 4) and the probe-goal system (see Chomsky 2000, 2001a, b). One consequence of the analysis is therefore that the concept of strength is not eliminable from the theory of grammar, contrary to Chomsky's recent proposal. Our analysis also has implications for constructions such as expletive constructions and *wh*-scope marking constructions.

Key words: aggressively non-D-linked *wh*-phrase, feature strength, multiple *wh*-question, probe-goal system

### **1. Introduction**

In this paper, we investigate three kinds of *wh*-elements: (a) *how come*, (b) *why the hell*, and (c) a particular instance of the lexical item “what” in several *wh*-fronting languages, whose interpretation is akin to ‘why’ or ‘why the hell’. In order to distinguish (a-c) above from regular reason adjunct *wh*-phrases (such as *why*), we shall refer to the former as the *secondary* adjunct *wh*-phrase, as opposed to the primary or regular adjunct *wh*-phrase. We shall demonstrate that secondary adjunct *wh*-phrases have certain properties in common: Not only are they used for asking reasons, but their distribution is restricted in similar manners. In light of such observations, we argue that they should be given a

---

<sup>\*</sup> This research would have been impossible without the assistance of many individuals. In particular, I would like to thank Jun Abe, Klaus Abels, Sigrid Beck, Cedric Boeckx, Željko Bošković, Noam Chomsky, Hajime Hoji, Julia Horvath, Jim Huang, Howard Lasnik, Shigeru Miyagawa, Nobu Miyoshi, Jairo Nunes, Junko Ochi, Rosanne Pelletier, Mamoru Saito, Yael Sharvit, Penka Stateva, Arthur Stepanov, Sandra Stjepanović, Koji Sugisaki, Dylan Tsai, Juan Uriagereka, and Saša Vukić. I am also grateful to two anonymous reviewers for constructive comments on an earlier version of this paper.

unified account. Our analysis is crucially based on Collins' (1991) insightful analysis of *how come*. Departing from his analysis in crucial respects, however, we shall offer an alternative, unified analysis of the secondary adjunct *wh*-phrase, building on feature strength in the sense of Chomsky (1995: chapter 4) and the probe-goal system (see Chomsky 2000, 2001a, b). One consequence of the analysis is that the concept of strength is not eliminable from the theory of grammar, contrary to Chomsky's recent proposal.

## 2. *How come* vs. *why*

Both *why* and *how come* are *wh*-elements for asking reasons. Nevertheless, there are some differences between them, as Collins (1991) points out. First, while *why* exhibits the familiar type of locality, i.e., allowing long-distance dependencies insofar as there is no island, *how come* allows only a local dependency, as shown in (1). Second, *how come* does not occur in multiple *wh*-questions, as illustrated in (2).<sup>1</sup> Third, *how come* does not induce scope ambiguity, as exemplified in (3).

- (1) a. Why did John say Mary left? (ambiguous)
- b. How come John said Mary left? (matrix only)
- (2) a. Why did John eat what?
- b. \*How come John ate what?
- (3) a. Why does everyone hate John? (why > every, every > why)
- b. How come everyone hates John? (how come > every, \*every > how come)

In order to account for such restrictions imposed on *how come*, Collins makes the following claim.

- (4) *How come* is an interrogative C head.

Collins (1991) argues that his hypothesis would immediately account for the lack of subject-aux inversion in examples such as (1b). Since the C position is filled with *how come*, INFL has no place to move to, as shown in (5).

- (5) [<sub>CP</sub> [<sub>C</sub> how come] [<sub>IP</sub> John said Mary left]]

---

<sup>1</sup> There is some disagreement with respect to the status of examples such as (2a). Lasnik and Saito (1984, 1992) among others find them acceptable while authors such as Epstein (1998) regard them as unacceptable. In this paper, we shall focus on the former dialect.

According to Collins, the strict locality of *how come* follows from the strict locality of head movement, such as the HEAD MOVEMENT CONSTRAINT (HMC). It is generally assumed that head movement is more constrained than XP-movement. In particular, the former is often assumed to be clause-bound.

As for the lack of multiple *wh*-questions with *how come*, Collins adopts the following condition from Chomsky (1973).

(6) CONDITION ON QUESTION INTERPRETATION

Assign a *wh*-phrase not in COMP to some higher structure [<sub>COMP</sub> +*wh*] and interpret as in (248) where the interpretation is uniform in this COMP node.

(Note: (248) is a rule that interprets *wh*-quantifiers that bind a trace.)

The idea is that the interpretation of multiple *wh*-phrases must be uniform in the sense that all *wh*-phrases interpreted by the same C must bind a trace. For instance, (7a) satisfies (6), assuming that *what* moves to the specifier of the interrogative C in covert syntax, leaving behind a trace as illustrated in (8a). On the other hand, assuming that *whether* is directly merged with the interrogative C (or *whether* itself is a C head), (7b) fails to satisfy (6), as shown in (8b).

- (7) a. I wonder [<sub>wh</sub><sub>i</sub> C [<sub>t</sub><sub>i</sub> bought what]]
- b. \*I wonder [whether C [<sub>IP</sub> John ate what]]
- (8) a. I wonder [<sub>wh</sub><sub>i</sub>, what<sub>j</sub> C [<sub>t</sub><sub>i</sub> bought <sub>t</sub><sub>j</sub>]]
- b. \*I wonder [whether, what<sub>j</sub> C [<sub>IP</sub> John ate <sub>t</sub><sub>j</sub>]]

The latter example, if grammatical, would have the reading, “I wonder which of these things are such that John did or didn’t eat them” (see Hornstein 1995: chapter 7). Returning to the paradigm in (2), the crucial difference between the two examples is that *how come* does not bind a trace. Certainly, the condition in (6) works well to distinguish the two cases, but it is a descriptive statement. In section 5, we attempt to derive its effects under a strictly derivational model of the grammar.

Although it may be debatable whether Collins’ explanation for the lack of multiple *wh*-questions with *how come* holds, since the potential interpretation of (7b) indicated above may be pragmatically odd to begin with (as Howard Lasnik (p.c.) observes), the lack of a trace/variable bound by *how come* helps us account for the fact that *how come* does not scopally interact with a QP. The relevant data in (3) is repeated below.

- (9) a. Why does everyone hate John? (why > every, every > why)
- b. How come everyone hates John? (how come > every, \*every > how come)

Suppose that the reading in which *everyone* takes scope over a *wh*-phrase obtains when the former c-commands a trace/copy of the latter. Example (9a) is ambiguous because *why* c-commands *everyone*, and *everyone* c-commands the trace/copy of *why* in IP (or VP), as shown in (10a). On the other hand, (10b) shows that *everyone* does not take scope over *how come* in (9b), since there is no trace of *how come*.

- (10) a. [Why<sub>i</sub> does [<sub>IP</sub> everyone hate John t<sub>i</sub>]]  
 b. [How come [<sub>IP</sub> everyone hates John]]

### 3. Other adjunct *wh*-phrases for asking reasons

Insightful though Collin's hypothesis seems to be, there are questions with his hypothesis stated in (4). In particular, we introduce two other types of 'reason' adjunct *wh*-phrases that manifest the same restrictions as *how come*. In light of evidence that such *wh*-phrases are not interrogative complementizers, we are led to seek an alternative analysis of *how come*.

#### 3.1 Aggressively non-D-linked *wh*-phrase

The aggressively non-D-linked adjunct *wh*-phrase *why the hell* manifests the same set of restrictions applying to *how come*.<sup>2</sup> It is fairly difficult to get the reading in which *why the hell* modifies the embedded clause in (11b). Further, it does not occur in a multiple *wh*-question (see (12b)), nor does it yield scope ambiguity (see (13b)).<sup>3</sup>

- (11) a. Why did you say that John is mad? (ambiguous)  
 b. Why the hell did you say that John is mad? (ok matrix, ??embedded)  
 (12) a. Why did you eat what?  
 b.\* Why the hell did you eat what?  
 (13) a. Why does everyone hate John? (every > why, why > every)  
 b. Why the hell does everyone hate John? (\*every > why, why > every)

However, it is clear that *why the hell* is not a complementizer, since it triggers subject-aux

<sup>2</sup> See Pesetsky (1988) and Lasnik and Saito (1992) for relevant discussion of D-linking.

<sup>3</sup> A word of caution is in order. According to den Dikken and Giannakidou (2002), the argument *wh-the-hell* also fails to yield scope ambiguity, as shown in (i). If this is true, the scope property of *why the hell* should be examined independently of the discussion in this paper, which aims to provide a unified account of the secondary adjunct *wh*-phrase.

(i) What the hell did everyone buy? (\*every > what, what > every)

inversion, as shown in (11)-(13) above.

The fact that *why the hell* and *how come* are subject to the same set of restrictions is our first empirical argument for the claim that something more than the complementizer hypothesis of Collins (1991) is needed.

### 3.2 Nominal adjunct *wh*-phrases for asking ‘reasons’

#### 3.2.1 Basic data

There is another class of *wh*-phrases which we believe should be analyzed here. This is a type of *wh*-questions in which the employed *wh*-word is ‘what’, but in which the interpretation is best translated as ‘why’ (or ‘why the hell’; see below). This peculiar *wh*-question is found in languages like German, Hungarian, and Serbo-Croatian.<sup>4</sup> Let us refer to this type of (unusual) *what* as WHAT, in order to distinguish it from the ordinary use of *what*.

- (14) Was schläfst du so lange? (German)  
 WHAT sleeps you so long  
 ‘Why are you sleeping so long?’
- (15) a. Mit/miert ulsz itt? (Hungarian)  
 WHAT-acc/why sit-2sg here  
 ‘Why are you sitting here?’  
 b. Mit/miert fenyegeted a gyerekeket?  
 WHAT-acc/why threaten-2sg the kids-acc  
 ‘Why are you threatening the kids?’
- (16) Zašto/Šta si ustao tako rano? (Serbo-Croatian)  
 why/WHAT have get up so early  
 ‘Why did you get up so early?’

Before proceeding, let us clarify three points about this peculiar *wh*-question. First, we should check to see whether or not WHAT-questions are true questions. This point is important, since a typical initial reaction of many speakers, irrespective of their native languages, is that WHAT-questions do not sound like true questions, but sound like

<sup>4</sup> English also allows a similar construction with the verb *care*. As shown in (ia), *care* does not take a direct object but allows *what* to coöccur, as in (ib). Its interpretation is similar to (ii). It is beyond the scope of the paper to discuss this type of example.

- (i) a. John cares \*(about/for) a car.  
 b. What do you care if John buys a new car?  
 (ii) Why do/should you care if John buys a new car?

rhetorical questions. There is, however, a piece of evidence for the interrogative nature of WHAT-questions. WHAT occurs within the complement of a verb selecting an interrogative clause, as illustrated in (17).

- (17) a. Ich frage mich, was Hans so gestresst ist. (German)  
 I ask myself WHAT Hans that stressed is  
 'I wonder why Hans is so stressed.'  
 b. Nem tudtuk hogy mit ulsz itt. (Hungarian)  
 not knew-1pl that WHAT sit-2sg here  
 'We didn't know why you're sitting here.'  
 c. Zanima me zašto/šta se Ivan pokunjio. (Serbo-Croatian)  
 it-interests me why/WHAT self Ivan got-depressed  
 'I would like to know why Ivan got depressed.'

Interestingly, secondary adjunct *wh*-phrases (*how come*, *why the hell*, and WHAT) have a common restriction in embedded contexts: they do not easily occur in the scope of factive predicates.<sup>5</sup> The relevant data are given in (18) for *how come* and in (19) for *why the hell*. Further, WHAT-examples are shown below: (20), (21) are German and (22), (23) are Hungarian.<sup>6</sup>

- (18) a. ??I know how come John is upset.<sup>7</sup>  
 b. (?)I don't know how come John is upset.  
 (19) a.\* I know why the hell you are sitting here.  
 b. I don't know why the hell you are sitting here.  
 (20) a. Ich weiss warum Hans so gestresst ist.  
 I know why Hans that stressed is  
 'I know why Hans is so stressed.'  
 b. Ich weiss nicht warum Hans so gestresst ist.  
 I know not why Hans that stressed is  
 'I don't know why Hans is so stressed.'

<sup>5</sup> Den Dikken and Giannakidou (2002) independently observe this restriction for *wh-the-hell* phrases. Our discussion here indicates that it applies to the secondary adjunct *wh*-phrase in general.

<sup>6</sup> It is impossible to construct similar data in SC, as the use of embedded clauses is quite restricted in this language (Željko Bošković (p.c.)).

<sup>7</sup> Some speakers do not like to have *how come* in embedded questions to begin with. For those speakers, even examples like (i) below and (18b) are marginal at best. Yet, all the speakers find examples like (18a) to be much more degraded.

(i) (?)I wonder how come John is upset.

- (21) a. \*Ich weiss was Hans so gestresst ist. (German)  
I know WHAT Hans that stressed is  
'I know why Hans is so stressed'  
b. Ich weiss nicht was Hans so gestresst ist.  
I know not WHAT Hans that stressed is  
'I don't know why Hans is so stressed'
- (22) a. Tudtuk hogy miert ulsz itt. (Hungarian)  
knew-1pl that why sit-2sg here  
'We know why you are sitting here.'  
b. Nem tudtuk hogy miert ulsz itt.  
Not knew-1pl that why sit-2sg here  
'We don't know why you are sitting here.'
- (23) a. \*Tudtuk hogy mit ulsz itt.  
knew-1pl that WHAT-acc sit-2sg here  
'We know why you are sitting here.'  
b. Nem tudtuk hogy mit ulsz itt.  
Not knew-1pl that WHAT-acc sit-2sg here  
'We don't know why you are sitting here.'

Second, why-questions and WHAT-questions are synonymous, but they are not identical in meaning. WHAT-questions are most appropriate in a context in which the speaker is emotionally affected (i.e., puzzled, annoyed, etc.). For instance, (24b) below is best uttered in a situation in which the speaker is annoyed, upset, or surprised by someone's sitting here (for example, he/she is sitting and resting, when he/she is supposed to be studying somewhere else). In this sense, it is more appropriate to translate WHAT as "why the hell", which we examined in the previous subsection.

- (24) a. Miert ulsz itt? (Hungarian)  
why sit-2sg here  
'Why are you sitting here?'  
b. Mit ulsz itt?  
WHAT-acc sit-2sg here  
'Why are you sitting here?'

Example (24a) can be used in the same set of contexts suitable for (24b), but it is also felicitous in emotionally neutral contexts. Crucially, this observation holds in all three languages listed above, German, Hungarian, and Serbo-Croatian: the use of WHAT is restricted by heavy pragmatic factors (as well as syntactic ones, as will be shown later) in every language possessing WHAT.

Finally, WHAT is not a direct object, since it occurs with a direct object in transitive constructions, as illustrated below.

- (25) Mit fenyegeted a gyerekeket? (Hungarian)  
 WHAT-acc threaten-2sg the kids-acc  
 ‘Why are you threatening the kids?’

### 3.2.2 Locality of WHAT

Let us now turn to the core of our discussion, which is the fact that WHAT has the same restrictions as *how come* and *why the hell*. First, the interpretation of WHAT is strictly clause-bound. Below, we present data from German in (26), Hungarian in (27), and Serbo-Croatian in (28). In each case, a shows a *why*-question and b shows a WHAT-question.

- (26) German  
 a. Warum glaubst du, daß er so lange schläft?  
 why believe you that he so long sleeps  
 ‘Why do you believe that he sleeps so long?’ (ambiguous)  
 b. Was glaubst du, daß er so lange schläft?  
 WHAT believe you that he so long sleeps  
 ‘Why do you believe that he sleeps so long?’ (matrix only)
- (27) Hungarian  
 a. Kati miert gondolta hogy fenyegeted a gyerekeket?  
 Cathy why thought that threaten-2sg the kids-acc  
 ‘Why did Cathy think that you are threatening the kids?’ (ambiguous)  
 b. Kati mit gondolta hogy fenyegeted a yerekeket?  
 Cathy WHAT-Acc thought that threaten-2sg the kids-acc  
 ‘Why did Cathy think that you are threatening the kids?’ (matrix only)
- (28) Serbo-Croatian  
 a. Zašto Petar tvrdi da se Ivan pokunjio?  
 why Peter claims that self Ivan got-depressed  
 ‘Why does Peter claim that Ivan is depressed?’ (ambiguous)  
 b. Šta Petar tvrdi da se Ivan pokunjio?  
 WHAT Peter claims that self Ivan got-depressed  
 ‘Why does Peter claim that Ivan is depressed?’ (matrix only)



### 3.2.3 WHAT and multiple *wh*-questions

Second, WHAT fails to occur in multiple *wh*-questions in all three languages under discussion, as illustrated by the data in (29)-(31). Note in particular that Serbo-Croatian does not show superiority effects in simple matrix questions (see Bošković 1999), as shown in (31a, b). As (31c, d) illustrate, multiple *wh*-questions with WHAT are ungrammatical irrespective of the order of *wh*-phrases.

- (29) a. Wer schläft warum so lange? (German)  
 who sleeps why so long  
 ‘\*Who is sleeping why so long?’  
 b. \*Wer schläft was so lange?  
 who sleeps WHAT so long  
 c. \*Was schläft wer so lange?  
 WHAT sleeps who so long
- (30) a. Ki miert fenyegeti a gyerekeket? (Hungarian)  
 who-Nom why threatens the kids  
 ‘Who is threatening the kids why?’  
 b. \*Ki mit fenyegeti a gyerekeket?  
 who-Nom WHAT-Acc threatens the kids
- (31) a. Ko se zašto pokunjio? (Serbo-Croatian)  
 who self why get-depressed  
 ‘\*Who is depressed why?’  
 b. Zašto se ko pokunjio?  
 why self who get-depressed  
 c. \*Ko se šta pokunjio?  
 who self WHAT get-depressed  
 ‘\*Who is depressed why?’  
 d. \*Šta se ko pokunjio?  
 WHAT self who get-depressed

### 3.2.4 WHAT/QP interaction

Third, WHAT fails to yield scope ambiguity. This point is demonstrated by German data in (32) and Serbo-Croatian data in (33).<sup>8</sup>

<sup>8</sup> Hungarian exhibits a different pattern. Neither *miert* ‘why’ in (ia) nor WHAT in (ib) yields scope ambiguity. This may not be surprising, given that in Hungarian the argument *wh*-phrase also fails to scopally interact with a quantifier, as shown in (ic).

(32) German

- a. Warum seid ihr alle gestresst?  
 Why be-2nd.pl you-2nd.pl all stressed  
 ‘Why are you all stressed?’ (ok pair-list)
- b. Was seid ihr alle gestresst?  
 WHAT be-2nd.pl you-2nd.pl all stressed (\*pair-list)

(33) Serbo-Croatian

- a. Zašto je svako toliko nervozan danas?  
 why is everyone so nervous today  
 ‘Why is everyone depressed today?’ (why > every, every > why)
- b. Šta je svako toliko nervozan danas?  
 WHAT is everyone so nervous today? (why > every, ??every > why)

This pattern is reminiscent of the contrast between *how come/why the hell* and *why* in English.

### 3.2.5 WHAT as a phrasal element

Up to this point, we have observed that the peculiar *wh*-element WHAT manifests the same restrictions as *how come* (and *why the hell*). We now provide arguments that WHAT is an element in the specifier of CP, not an interrogative complementizer.

First, a matrix WHAT-question exhibits verb second (V2) effects in German. Under the standard assumption about V2, i.e., that a verb occupies the C-slot and whatever precedes the verb is located in the specifier of CP, WHAT in German cannot be a complementizer in examples like (34).

- (34) Was schläfst du (so lange)?  
 WHAT sleeps you (so long)  
 ‘Why are you sleeping so long?’

- 
- (i) a. Minden diak miert fenyegeti a gyerekeket?  
 every student why threatens the kids  
 ‘Why is every student threatening the kids?’ (\*pair-list)
- b. Minden diak mit fenyegeti a gyerekeket?  
 every student WHAT-acc threatens the kids  
 ‘Why is every student threatening the kids?’ (\*pair-list)
- c. Minden diak mit látta?  
 every student what-acc saw  
 ‘What did every student see?’ (\*pair-list)

We shall therefore put aside Hungarian in this subsection.

Second, Hungarian *mit* ‘what’ (as ‘why’) always bears case (or Case). To our knowledge, there is no language in which a complementizer always bears a morphological case. This fact strongly suggests that WHAT in Hungarian is not a complementizer. Note that there is one language that is seemingly an exception to the statement above. In Japanese, the interrogative complementizer *-ka* optionally takes a case/Case particle.

- (35) Taro-wa [dare-ga kita ka](-o) sitteiru.  
 Taro-Top who-Nom came Q]-Acc know  
 ‘Taro knows who came.’

Even in Japanese, however, this is restricted to an embedded clause. The interrogative complementizer *-ka* never takes a case particle in a matrix clause.

- (36) a. Dare-ga kimasi-ta ka?  
 who-Nom come-Past Q  
 ‘Who came?’  
 b. \*Dare-ga kimasi-ta ka-ga/o/ni?  
 who-Nom come-Past Q-Nom/Acc/Dat

On the other hand, Hungarian WHAT must appear in the accusative form in matrix as well as embedded clauses. The discussion above leads to the conclusion that WHAT is not an interrogative head.

### 3.2.6 Summary

To sum up, we have shown that the restrictions on *how come* are not unique to this *wh*-item. We have found other *wh*-elements manifesting the same properties, which are clearly not interrogative complementizers. This in turn raises a question. If the restrictions on those *wh*-elements are not due to their head status, what other factors are responsible for such restrictions? Notice that all the languages considered above (German, Hungarian, Serbo-Croatian, as well as English) are *wh*-fronting languages. We shall argue that this is not an accident. Our proposal is that the peculiarities shared by secondary adjunct *wh*-phrases (i.e., *how come*, *why the hell*, and WHAT) are in part due to a certain property common to those *wh*-fronting languages. More precisely, we claim that their peculiarities are closely tied to the mechanism responsible for overt *wh*-movement.<sup>9</sup> Our proposal will receive empirical support from Japanese, a *wh*-in-situ language, in which WHAT behaves like a regular adjunct *wh*-phrase.

<sup>9</sup> Of course, ‘*wh*-fronting languages’ could be (and have often been) subdivided into several groups, with some languages affecting all the *wh*-phrases while others affecting just one etc.

### 3.3 *Wh*-in-situ language: Japanese

Japanese, which is a *wh*-in-situ language, also contains WHAT, as discussed by Kurafuji (1997).<sup>10</sup> As the data below illustrate, *nani-o* ‘what’ can be used to ask reasons. Note also that such questions employing *nani-o* have the flavor of a surprise question, suggesting that what we have in Japanese is an instance of WHAT-questions.

- (37) a. John-wa naze/nani-o awateteiru no?  
 John-Top why/WHAT-Acc panicking Q  
 ‘Why is John panicking?’  
 b. John-wa nani-o manga-o yonderu no?<sup>11</sup>  
 John-Top WHAT-Acc comics-Acc reading Q  
 ‘Why is John always reading comics?’  
 c. Boku-wa [John-ga nani-o hashitteiru (no) ka] tazuneta.  
 I-Top John-Nom WHAT-Acc running Q asked  
 ‘I asked why John is running.’ (Japanese)

Nevertheless, WHAT in Japanese behaves like a regular adjunct *wh*-phrase in the relevant respects, in a stark contrast to its counterpart in *wh*-fronting languages.

First, as pointed out by Kurafuji (1997), WHAT shows the locality familiar from the study of *naze* ‘why’. It can be construed across a clause, as long as there is no island, as shown in (38).

<sup>10</sup> In addition to Japanese, Turkish and Chinese apparently allow *ne* ‘what’ and *sheme* ‘what’ respectively to be used to ask for reasons (i). Due to space limitation, we shall not discuss these *wh*-in-situ languages in this paper.

- (i) a. John nicin/ne kos-uyor?  
 John why/what run-Prog  
 ‘Why is John running?’ (Turkish)  
 b. Ni kũ sheme?  
 you cry what  
 ‘Why are you crying?’ (Chinese)

<sup>11</sup> (37b) is slightly degraded because of the double *-o* constraint in this language (see Harada 1973). As Kurafuji (1997) notes, the relevant example is perfect when the direct object is accompanied by a particle such as *bakari* ‘only’, in which case *-o* can be dropped (i).

- (i) John-wa nani-o manga-bakari yonderu no?  
 John-Top WHAT-Acc comics-only reading Q  
 ‘Why is John reading only comics?’

- (38) a. Kimi-wa [John-ga naze/nani-o awateteiru to] omou no?  
 you-Top John-Nom why/WHAT-Acc panicking that think Q  
 ‘Why do you think [that John is panicking t]?’  
 b. \*Kimi-wa [[naze/nani-o awateteiru] hito]-o shikatta no?  
 you-Top why/WHAT-Acc panicking person-Acc scolded Q  
 ‘\*Why did you scold [a person [who was panicking t]]?’

Second, Japanese allows multiple *wh*-questions with WHAT. Both *naze* ‘why’ and WHAT can occur in multiple *wh*-questions.<sup>12</sup>

- (39) Dare-ga naze/nani-o sawaideiru no?  
 who-Nom why/WHAT-Acc clamoring Q  
 ‘Who is clamoring why?’ (Kurafuji 1997)

Third, WHAT in Japanese patterns with the adjunct *wh*-phrase *naze* ‘why’ with respect to *wh*-quantifier interactions. Many speakers seem to find both (40a) and (40b) to be ambiguous.

- (40) a. Minna-ga naze awateteiru no?  
 everyone-Nom why panic Q  
 ‘Why is everyone panicking?’ (why > every, every > why)  
 b. Minna-ga nani-o awateteiru no?  
 everyone-Nom WHAT-Acc panic Q  
 ‘Why is everyone panicking?’ (why > every, every > why)

To recapitulate, WHAT in Japanese acts like a regular adjunct *wh*-phrase, unlike its counterparts in *wh*-fronting languages, i.e., German, Hungarian, and Serbo-Croatian. Why is it that WHAT is parallel to *how come* in *wh*-fronting languages, and to the regular adjunct *wh*-phrase in a *wh*-in-situ language, Japanese? In order to solve this puzzle, we shall consider how the typology of *wh*-questions, in particular the difference between *wh*-fronting and *wh*-in-situ, is characterized in the Minimalist Program.

<sup>12</sup> As noted by Kurafuji, WHAT in Japanese exhibits anti-superiority effects (on a par with *naze* ‘why’). In fact, the effect seems even stronger in (ib) than in (ia).

- (i) a. ?\*Naze dare-ga awateteru no?  
 why who-Nom panicking Q  
 ‘Who is panicking why?’  
 b. \*Nani-o dare-ga awateteru no?  
 WHAT-Acc who-Nom panicking Q

#### 4. Minimalist program and feature strength

We shall incorporate a particular view of feature strength into our account. Chomsky (1993, 1994, and 1995) proposed that “overt” movement is driven by the need to check off strong features. And the very nature of strong features has been an issue of intense scrutiny (see Lasnik 1999 for a comprehensive discussion of this issue). In what follows, we shall adopt Chomsky’s (1995: chapter 4) definition of strong features as the ones that the derivation cannot tolerate. The guiding idea is that once a strong feature is introduced into the structure, it must be checked off and eliminated as soon as possible. Let us understand “as soon as possible” to mean “by the next operation”. Once an element with a strong feature is merged into the structure, this strong feature must be checked off by the next operation. Otherwise, the derivation would not converge. Let us refer to this particular view of feature strength as the VIRUS theory of feature strength, a term due to Juan Uriagereka.<sup>13</sup>

This conception of feature strength virtually excludes the possibility that the moving item has a strong feature. Suppose that *what* has a strong feature that needs to be checked off against the interrogative C in (41). Since an object (in English) must be merged with a verb (for theta reasons), the derivation is necessarily cancelled at the next step after *what* is merged with the verb, since the strong feature of *what* has not yet been checked off: The C (as well as T and *v*) must be merged before *what* has a chance to check off its strong feature.

- (41) a. What did John buy?  
       b. [<sub>VP</sub> buy what]  
       c. *v* [<sub>VP</sub> buy what]                      Derivation cancelled

For Chomsky (1995), overt movement of *what* is triggered by the need for the interrogative C to check off its strong feature(s) against a *wh*-phrase. In short, what drives movement is (in principle) the inadequacy of the target (what Chomsky (1995) calls ATTRACT) and a strong feature must be checked off immediately upon its introduction into the derivation. Building on this mechanism of movement, we shall offer our analysis in the next section.

---

<sup>13</sup> This term is due to the idea that strong features are like viruses for the computational system, and hence must be eliminated immediately. Note that this VIRUS theory should not be confused with the “virus” in the sense of Sobin (1997).

## 5. Proposal

Let us first spell out some background assumptions. We shall assume the probe-goal system of Chomsky (2000, 2001a, b).<sup>14</sup> In particular, we assume the three operations listed in (42) to be made available by the UG.

- (42) a. AGREE  
b. MERGE  
c. MOVE (AGREE + PIED-PIPING + MERGE)

We also assume (43) along the line of Chomsky (2000).

- (43) *Wh*-phrases have an uninterpretable *wh*-feature that must be checked off against the relevant interrogative head H (such as a complementizer or a focus head).

In examples like {*What did John buy?*}, the dependency between the interrogative C and *what* in the underlying object position is established by AGREE, a long-distance agreement relation, which checks off the uninterpretable *wh*-feature of *what* and the uninterpretable [Q]-feature of the probe, C. As for the reason that MOVE affects *what*, we attribute it to the presence of a strong feature in the target.

Let us now present our proposal. Modifying Chomsky's concept of strong features somewhat, we propose (44). Number (45) is our proposal about the nature of *wh*-phrases.

- (44) Modified VIRUS Theory  
A strong feature must be checked off  
(a) as soon as possible (i.e., by the next operation), and  
(b) in a local configuration (i.e., by MERGE or MOVE).
- (45) a. Regular adjunct *wh*-phrase (and argument *wh*-phrase)  
The strength of *wh*-feature is [-strong].  
b. Secondary adjunct *wh*-phrase  
The strength of *wh*-feature is [ $\alpha$  strong] in a language in which H is [ $\alpha$  strong].

Number (44) states that a strong feature (VIRUS) must be eliminated by the next operation, and an AGREE relation does not suffice for the checking of a strong feature. Notice

---

<sup>14</sup> There is one respect in which we depart from Chomsky (2000). Chomsky proposes that overt movement (pied-piping) is driven by the need to satisfy the EPP requirement. See the discussion in section 6.2.

crucially that (44b) forces pied-piping of the goal.<sup>15</sup>

Let us turn to (45). For the reason discussed above, a moving item in general does not bear a strong feature, which is why we have (45a) as the unmarked case. (45b) is a statement specifically about the secondary adjunct *wh*-phrase. Its strength is initially unspecified, and is specified on the basis of the strength of the interrogative head in each language. Another way of stating it is that the feature strength of the secondary adjunct *wh*-phrase co-varies with the strength of the interrogative C in a given language.

### 5.1 *Wh*-fronting languages

Let us now consider *wh*-fronting languages (i.e., languages with a strong feature on the interrogative head). According to (45b), the relevant feature specification of the secondary adjunct *wh*-phrase is [+strong]. Thus, if it is merged in IP or VP, its strong *wh*-feature could not be checked off until the relevant interrogative head (such as C) is merged later in the derivation, and the derivation does not converge, as shown in (46).

- (46) a. [IP ... *wh*-phrase]  
           [wh, +s]  
       b. C [IP ... *wh*-phrase]]           Derivation cancelled  
           [Q, +s] [wh, +s]

Is there a way for the secondary adjunct *wh*-phrase to have its strong *wh*-feature checked off right after it is introduced into the structure? The only way is merging it with the interrogative H directly, namely, insertion of the secondary adjunct *wh*-phrase into the specifier of the interrogative H, upon which the former is in the checking domain of the latter.<sup>16</sup> This is illustrated below.

<sup>15</sup> In this sense, the definition of strong feature in (44) is similar to Chomsky's EPP-feature.

<sup>16</sup> There is another possible derivation to be examined. Consider (i), in which the secondary adjunct *wh*-phrase is merged inside IP. If there is another (regular) *wh*-phrase below it, it should in principle be possible for the secondary adjunct *wh*-phrase to attract the lower *wh*-phrase. Yet, we have already seen that the secondary adjunct *wh*-phrase never occurs with another *wh*-phrase in the domain of the same interrogative C (ii).

- (i) [IP    *wh*-phrase .... *wh*-phrase]  
           [wh, +s]           [wh, -s]  
 (ii) \*How come John bought what?

It is informative to note that Grewendorf (2001) in fact proposes a mechanism by which a *wh*-phrase serves as a probe, attracting another *wh*-phrase. Crucially, however, Grewendorf observes that an adjunct *wh*-phrase cannot serve as a probe. See Grewendorf (2001) and the references cited therein, especially Saito (1994), for much relevant discussion.



- (47) a. [<sub>CP</sub> How come            C    [<sub>IP</sub> ..... ]] (English)  
           [wh, +s]            [Q, +s]  
       b. [<sub>CP</sub> WHAT            C    [<sub>IP</sub> ..... ]] (German, Hungarian, Serbo-Croatian)<sup>17</sup>  
           [wh, +s]            [Q, +s]

Note that, as discussed in section 3.2.1, WHAT is not an argument, and hence there is no theta-related problem even if it is merged directly with the interrogative C.

If this analysis is on the right track, therefore, it argues against Chomsky's (2001b) view that the spec-head relation plays no role.

### 5.1.1 Lack of long-distance dependency

This hypothesis provides a simple account for the lack of (long-distance) movement of the secondary adjunct *wh*-phrase. It is well established that an element in the specifier of the interrogative head is frozen for a further movement. Consider the ungrammaticality of (48a) and its possible derivation in (48b). Chomsky (2000) speculates that once a *wh*-phrase has its uninterpretable feature checked off, it is not active for a further syntactic operation, which is why *who* in this example cannot raise into the matrix clause.

- (48) a. \*Who do you wonder bought what?  
 b. Who do you wonder [<sub>CP</sub> t C [<sub>IP</sub> t bought what]]
- 

Similarly, once the secondary adjunct *wh*-phrase is merged with the interrogative H and has its uninterpretable F checked off, it is inactive for further movement. The lack of the embedded reading in examples like below immediately follows.

- (49) Was glaubst du, daß er so lange schläft?  
 WHAT believe you that he so long sleeps  
 'Why do you think that he is sleeping so long?' (matrix only)

<sup>17</sup> Hungarian may need a different treatment, since a fronted *wh*-phrase is preceded by a complementizer (such as *hogy* ‘that’). Nevertheless, it has been assumed occasionally in the literature (see Horvath 2000) that the function of C in Hungarian is split into *hogy* ‘that’ (functioning as subordinator) and another (phonologically null) functional head (indicating mood or focus). We shall abstract away from the precise nature of the functional head triggering overt movement of focused elements in Hungarian, referring to the landing site of a *wh*-phrase as the specifier of CP, following Horvath (2000).

Suppose that *WHAT* is merged with the embedded *C*, which is not interrogative. The derivation crashes at the next step where the matrix verb is merged with the embedded *CP*. The strong *wh*-feature of *WHAT* cannot be checked off until the interrogative *C* is introduced much later in the derivation. As a result, no long-distance dependency is available for the secondary adjunct *wh*-phrase.

### 5.1.2 Multiple *wh*-questions

Another property of the secondary adjunct *wh*-phrase is its inability to occur in a multiple *wh*-question. Recall that Collins (1991) resorts to Chomsky's (1973) *CONDITION ON QUESTION INTERPRETATION* stated in (6) to explain the impossibility of *how come* in multiple *wh*-questions. But this condition itself is in need of explanation. In this subsection, we show that the probe-goal system provides a simple account of this fact.

Let us first examine a singular *wh*-question, in which the operation *MOVE* (*AGREE* + *PIED-PIPING* + *MERGE*) applies to *who*.

- (50) a. I wonder who left.  
       b.     *C*    [*IP* *who* .....]                    (*AGREE* part of *MOVE* applies)  
               [*Q*, +*s*] [~~*wh*~~, -*s*]  
       c.   [*CP* *who*    *C*   [*IP* (*who*) .....]]       (*PIED-PIPING* applies)  
               [~~*wh*~~, -*s*] [*Q*, +*s*] ([~~*wh*~~, -*s*])

As shown in (50b), the *AGREE* part of *MOVE* checks off the uninterpretable feature of *who* in the subject position.<sup>18</sup> *PIED-PIPING* and *MERGE* apply to *who* as shown in (50c), placing it in the specifier of *CP* and thereby checking off the strong *Q*-feature of the *C* (recall that according to (44b), a strong feature must be checked off in a local configuration).

Let us now turn to multiple *wh*-questions.<sup>19</sup> Consider (51) below. We assume that *MOVE* (*Agree* + *PIED-PIPING* + *MERGE*) applies in this case as well. Number (51a) illustrates how the *AGREE* part of this operation works. Assuming that each *wh*-phrase bears the uninterpretable *wh*-feature, let us suppose that the interrogative *C* agrees with each and every one of the *wh*-phrases which it interprets. Thus, the matrix interrogative *C* establishes an *AGREE* relation with both *who* and *what*, thereby checking off their uninterpretable *wh*-features. Crucially, *MOVE* was selected rather than *AGREE* because of the need to check off the strong *Q*-feature of the *C*. Since English requires just one

<sup>18</sup> Recall our proposal in (45a) that a regular argument/adjunct *wh*-phrase has the uninterpretable *wh*-feature that is [-strong]. Thus, *Agree* suffices to eliminate it in this case.

<sup>19</sup> We shall not consider phases in this paper.

*wh*-phrase to pied-pipe, the higher *wh*-phrase *who* is pied-piped, as illustrated in (51b), checking off the strong feature of the C. This completes the operation MOVE and the derivation converges as no uninterpretable feature remains in the structure.

- (51) Who bought what?
- a. MULTIPLE AGREE
- C [IP who [vP bought what]]
- [Q, +s] [~~wh~~, -s] [~~wh~~, -s]
- b. PIED-PIPING applies to *who* to check off the strong F of the C
- [who C [IP (who) bought what]]
- [~~wh~~, -s] [~~Q~~, +s] ([~~wh~~, -s]) [~~wh~~, -s]

Let us now examine the crucial data in (2), repeated below.

- (52) a. Why did John eat what?  
b. \*How come John ate what?

Below is a derivation for (52a). Like the derivation shown above, MOVE is required because of the strong Q-feature of the C. First, the AGREE part of the operation checks off the relevant uninterpretable features of *what* and *why*. Then, *why* is pied-piped as shown in (53b), and the derivation converges.

- (53) a. C [IP ..... what ... (why)]  
[Q, +s] [~~wh~~, -s] [~~wh~~, -s]  
b. Why C [IP ..... what ... (why)]  
[~~wh~~, -s] [Q, +s] [~~wh~~, -s] ([~~wh~~, -s])

Let us examine (52b). Suppose that the derivation has reached the stage shown in (54), where the interrogative C is merged with IP. What would be the next step? We have two options. Either AGREE applies and checks off the uninterpretable *wh*-feature of *what*, or MERGE applies to *how come* (which is in the numeration). No matter which option is chosen, the derivation does not converge. Let us see why.

- (54) C [IP John bought what]  
[Q, +s] [wh, -s]

Suppose that the former is chosen. This derivation does not converge because the strong Q-feature of the C is not checked off by the next operation after it is introduced into the

structure (recall that a strong feature must be checked off immediately; see (44a)).<sup>20</sup>

- (55) C [IP John bought what]  
           [Q, +s]                      [~~wh~~, -s]

Let us consider the alternative derivation, in which *how come* is selected from the numeration and merged with the C (or C'). This is illustrated in (56). Once *how come* is inserted, it is in a checking relation with the C. Consequently, the strong *wh*-feature of *how come* and the strong Q-feature of the C are checked off. However, the *wh*-feature of *what* remains.

- (56) How come C [IP John bought what]  
           [~~wh~~, -s] [Q, -s]                      [wh, -s]

Note that AGREE cannot apply due to (57) from Chomsky (2001a).

- (57) Goal as well as probe must be active for AGREE to apply.

With all of its uninterpretable features gone, the C is no longer active.<sup>21</sup> As a result, the

<sup>20</sup> If *what* is pied-piped into the specifier of CP, the strong Q-feature of the interrogative C is checked off immediately in a local configuration, and the derivation converges, resulting in the sequence {*What did John buy?*}. The problem is that *how come*, which is in the numeration, fails to be introduced in the derivation. Thanks to an anonymous reviewer for pointing out this possibility.

<sup>21</sup> The analysis is reminiscent of Chomsky's (2000, 2001a) treatment of expletives (thanks to Jun Abe (p.c.) for discussion). In (i), *there* is merged with T, and the EPP-feature of T and the uninterpretable  $\phi$ -feature of *there* are checked off. Being defective (i.e., without a full complement of  $\phi$ -features), *there* cannot eliminate the uninterpretable  $\phi$ -features of T. T thus remains active and agrees with the NP *a man*.

(i) a. There is a man in the room.

b. [<sub>TP</sub> there T is a man in the room]

The secondary adjunct *wh*-phrase is not defective in this sense (otherwise, examples like *how come John is in the room?* would be ungrammatical). The definition of defectiveness is based upon a set of  $\phi$ -features. But unlike T and *v*, C does not have  $\phi$ -features, and hence does not require its goal to have  $\phi$ -features. This is why no issue of  $\phi$ -completeness arises for the secondary adjunct *wh*-phrase (thanks to an anonymous reviewer for suggestions). Once it is merged with the interrogative C, the latter loses its uninterpretable features and ceases to be active.

In fact, a parallelism between expletives and secondary adjunct *wh*-phrases goes much further. Bošković (2002) presents several arguments to show that expletives do not undergo movement at all, and they are always merged in their surface position. See section 6.2.

derivation does not converge.

Thus, no derivation converges in this case, and the contrast in grammaticality in (52a, b) is accounted for in a principled manner. In a nutshell, the crucial difference between the two examples is the number of operations required. While only one operation, MOVE, suffices at the relevant point in the derivation for (52a), two independent operations are required for (52b).

### 5.1.3 *Wh*-QP interaction

Recall that the secondary adjunct *wh*-phrase in *wh*-fronting languages does not yield scope ambiguity. By adopting Collins' (1991) analysis, we attribute the unambiguity of such examples to the fact that the secondary adjunct *wh*-phrase lacks a trace. This is illustrated by German data in (58)-(59).

- (58) German
- a. Warum seid ihr alle gestresst?  
 Why be-2nd.pl you-2nd.pl all stressed  
 'Why are you all stressed?' (ok pair-list)
  - b. Was seid ihr alle gestresst?  
 WHAT be-2nd.pl you-2nd.pl all stressed (\*pair-list)
- (59) a. [CP warum<sub>i</sub> C [IP QP ..... t<sub>i</sub>]]  
 b. [CP WHAT C [IP QP ..... ]]

## 5.2 *Wh*-in-situ language

Let us turn to Japanese, in which the interrogative C is weak. Accordingly, the relevant feature of WHAT is specified as [-strong], like a regular (adjunct) *wh*-phrase (see (45a)). Then, WHAT need not be merged into the specifier of CP, but can be merged in-situ. As given below, AGREE suffices to check off the uninterpretable features of the probe and the goal, and there is no need to invoke a more complex operation, MOVE. The parallel behavior of *naze* 'why' and WHAT is therefore expected.

- (60) a. C [IP .... naze ... ]  
           [Q, -s]      [wh, -s]  
 b. C [IP .... WHAT ... ]  
           [Q, -s]      [wh, -s]

Thus, whatever the syntax of adjunct *wh*-in-situ turned out to be, it will carry over to the secondary adjunct *wh*-in-situ.

Let us end this section with a remark about regular adjunct *wh*-phrases. We assume that they are base-generated in IP (or VP), which is why they can undergo (long-distance) movement, occur in multiple *wh*-questions, and yield scope ambiguity. However, nothing in our proposal prevents those regular adjunct *wh*-phrases from being merged directly with the interrogative C (Rizzi 1990), as long as it is not the only option. It could be that regular adjunct *wh*-phrases have more than one merging site, spec of CP and within IP. This can be directly observed in Chinese (thanks to Dylan Tsai (p.s.) for providing relevant data). As discussed by Aoun and Li (1993), *weishenme* ‘why’ occurs before or after the subject. Crucially, when it occurs before the subject as in (61b), there is no scope interaction between *weishenme* ‘why’ and the subject QP. The lack of ambiguity in (61b) follows if *weishenme* ‘why’ in this example is base-generated in the spec of the interrogative CP (hence no variable to bind within the clause), a possibility suggested by Aoun and Li.

- (61) a. Meigeren dou weishenme da ta? (pair-list allowed)  
           everyone all why hit him  
           ‘Why did everyone hit him?’  
       b. Weishenme meigeren dou da ta? (\*pair-list)  
           why everyone all hit him

As expected, *weishenme* ‘why’ fails to occur in a multiple *wh*-question when preceding the subject (thanks to Jim Huang (p.c.) for providing data).

- (62) a. Ni weishenme mai-le shenme?  
           you why bought what  
           ‘Why did you buy what?’  
       b. ??Weishenme ni mai-le shenme?  
           why you bought what  
           ‘Why did you buy what?’

## 6. Implications of our proposal

### 6.1 Remarks on secondary adjunct *wh*-phrases in English

The analysis presented in the last section is crucially based on Collins’ (1991) analysis. Building on his insight, we argued that if the feature specification of the secondary adjunct *wh*-phrase is [+strong], it must be merged directly with the interrogative C. Let us focus a little more on the secondary adjunct *wh*-phrases in English, *how come* and *why the hell*, since there are some specific questions to be addressed.

As for *how come*, there still remains an argument for the complementizer status of *how come*. It is the lack of subject-aux inversion in *how come* questions.

- (63) a. Why should you leave?  
       b. \*Why you should leave?
- (64) a. How come John should leave?  
       b. \*How come should John leave?

We believe that this fact can be given an alternative account under the hypothesis that *how come* is in the specifier position of CP. Suppose that subject-aux inversion takes place because the interrogative C in English has a strong verbal feature to check off.<sup>22</sup> According to this hypothesis, the interrogative C attracts the (closest) verbal feature in (63), which is that of *should* in INFL, as illustrated in (65a). Turning to (64), let us speculate that *how come* is a *wh*-phrase which bears some of the features of *how* and *come*. We do not mean to claim that *how come* is made up of these two words.<sup>23</sup> The idea is that *how come* shares some features with both *how* and *come*. For instance, we may say that *how come* and *how* share some features such as *wh*-feature. Along this line, we could suppose that *how come* and *come* share some features including a verbal feature. Then, as shown in (65b), the strong verbal feature of the interrogative C can be checked off against *how come* upon merger of the two, and there is no need for the C to attract *should*.<sup>24</sup> In short, *how come* checks off two strong features of the C: Q-feature and verbal feature.

- (65) a. [why<sub>i</sub> C [IP ... INFL ..... t<sub>i</sub>]]  
           [v, +s]      [v, -s]  
           ↑  
       b. [how come C [IP ... INFL .....]]  
           [v] [v, +s]      [v, -s]

<sup>22</sup> Regarding the lack of subject-aux inversion in embedded clauses, Bošković (2000) offers an interesting speculation. One crucial difference between the matrix C and the embedded C is the absence/presence of a higher verb (*wonder* in (ib)). Assuming (as we do) that the C has a verbal property to check off, Bošković speculates that it is possible for the verbal feature of the embedded C to be satisfied by C-to-V raising, an option which is not available for the matrix C in (ia). If we assume that I-to-C is a last resort operation to satisfy the verbal property of the interrogative C in English, it is possible to give an account for the lack of I-to-C in (ib).

(i) a. Why should John leave? (\*Why John should leave?)  
       b. I wonder why John should leave. (\*I wonder why should John leave.)

Although it is beyond the scope of this paper to provide a precise account of (i), Bošković's speculation is worth pursuing.

<sup>23</sup> Thanks to an anonymous reviewer for raising a question in this regard.

<sup>24</sup> This analysis indicates that the relevant feature triggering I-to-C movement is not tense. Whether or not this holds cross-linguistically is an issue to be investigated further, as Howard Lasnik (p.c.) cautions us.

Once we have this analysis, the evidence for the *C* status of *how come* in English disappears, and it can be analyzed on a par with the rest of the secondary adjunct *wh*-phrase.<sup>25</sup>

As for *why the hell*, an obvious question is the locus of the strong feature. Given the contrast between *why* and *why the hell* (i.e., only the latter has a strong feature), one easy answer is to identify the strong feature with *the hell*. This does not go through, however, because of the distribution of argument *Wh-the-hell* phrases. They can move (across a clause) and occur in a multiple *wh*-question.

- (66) a. What the hell do you think he bought?  
b. Who the hell bought what?

Thus, we must leave open the question of the function of *the hell* with respect to the proposal made here.<sup>26</sup>

## 6.2 EPP vs. strength

Our proposal is crucially based on feature strength. For us, a strong feature is a feature that must be checked off in a local configuration by merging the two elements undergoing feature checking. As a result, MERGE or MOVE is triggered. Recently, Chomsky (2000) has proposed an EPP-based approach to the “overt vs. covert” distinction. According to this analysis, if the interrogative head *H* bears an EPP feature, pied-piping of a *wh*-phrase (with which *H* has agreed) is required. Otherwise, AGREE suffices to check off uninterpretable features of the probe and the goal. Let us see if we can capture the peculiar behavior of the secondary adjunct *wh*-phrase by using this conception of “overt” movement.

The answer is negative. Assume that the interrogative *H* in *wh*-fronting languages has the EPP-feature. Of course, this alone does not explain the distribution of the secondary (as opposed to regular) adjunct *wh*-phrase. Suppose then that the secondary adjunct

<sup>25</sup> Diane Lillo-Martin (p.c.) informs me that at least for some speakers, it is possible to have subject-aux inversion with *how come*, although it is quite limited. According to her, examples sound good especially with negation (i).

(i) How come won't you be here tomorrow?

<sup>26</sup> One could also raise another question. Suppose that (i) *why* necessarily has a [-strong] *wh*-feature (see (45a)) and (ii) *the hell* has a [ $\alpha$  strong] *wh*-feature, which is then specified as [+strong]. Apparently, their feature specifications conflict, and it is unclear how the lexical item *why the hell* is formed in the lexicon. One possibility is to maintain (ii) while rejecting (i). As briefly discussed in section 5.2, our proposal permits *why* to be merged directly into the specifier of the interrogative CP, which means that *why* has the option of having a [ $\alpha$  strong] *wh*-feature, in addition to having a [-strong] feature. If so, there is no feature incompatibility.



*wh*-phrase is unique in that it has the EPP-feature. Taken literally, this does not make much sense, since the EPP-feature of an element *E* requires *E* to have a specifier. For the sake of argument, however, let us understand the EPP-feature to be a feature that must be checked off in a local domain (i.e., AGREE will not suffice for the EPP-feature checking), which is why Move (or pure MERGE, in the case of expletives) is required for the EPP-feature checking. This comes close to the modified VIRUS theory in (44). This account is nevertheless insufficient, because the derivation shown in (67) is still permissible for *wh*-fronting languages.

- (67) a. C [IP ..... WHAT]  
           [EPP]                   [EPP]  
       b. WHAT C [IP ..... t]  
           [EPP] [EPP]

By hypothesis, the secondary adjunct *wh*-phrase as well as the interrogative *C* bears the EPP-feature, which needs to be checked off in a local domain. This is exactly what happens in (67b) and the derivation should converge. The secondary adjunct *wh*-phrase is not forced to be merged directly with *H*, and its peculiar distribution is left unaccounted for. The crucial factor missing here is (44a). We therefore conclude that strength as VIRUS (i.e. something that a derivation cannot tolerate and must eliminate as soon as possible) is inescapable.

One theoretical consequence of this proposal is that we can no longer stipulate that a VIRUS feature which triggers overt movement only resides in the projecting element. The secondary adjunct *wh*-phrase has a VIRUS although it does not project. This shows that a moving item as well as a target can in principle bear a VIRUS. Is there any other moving item with a VIRUS? A good candidate is the expletive. According to Bošković (2002), expletives do not undergo movement at all (contrary to a very popular view in the field). Rather, they are always merged in their surface position. We can assume then that expletives have a VIRUS feature that needs to be checked against an appropriate head such as *T* (which also has a VIRUS feature). We shall not pursue this possibility further here.

### 6.3 *Wh*-scope marking construction

Finally, our proposal has an implication for the scope marking construction in German (McDaniel 1989) and Hungarian (Horvath 1997, 2000). In German, WHAT fails to occur in this construction, as shown in (68b). In Hungarian, on the other hand, WHAT can occur in a [-*wh*] clause on a par with other *wh*-phrases including *miert* ‘why’ (Julia Horvath (p.c.)). This is shown in (69).

- (68) a. Was glaubst du, warum Fritze so rennt? (German)  
 WH believe you why Fritze so runs  
 ‘Why do you think that Fritze is hurrying?’  
 b. ??Was glaubst du was Fritze so rennt?  
 WH believe you WHAT Fritze so runs  
 ‘Why do you think that Fritze is hurrying?’
- (69) a. Mit gondolsz hogy miért fenyegeti Janos a gyereket? (Hung.)  
 WH-Acc think-2sg that why threatens John the kids-Acc  
 ‘Why do you think that John is threatening the kids?’  
 b. Mit gondolsz hogy mit fenyegeti Janos a gyereket?  
 WH-Acc think-2sg that WHAT threatens John the kids-Acc  
 ‘Why do you think that John is threatening the kids?’

We suspect that this difference between German and Hungarian is tied to the different ways in which the scope marking construction is licensed in the two languages. Let us start with German. According to McDaniel (1989), a contentful *wh*-phrase, which occupies the left edge of an embedded [-*wh*] clause, raises in covert syntax to replace the *wh*-expletive *was*. If we follow Chomsky (2000), this means that a contentful *wh*-phrase still bears an uninterpretable feature after it has moved into its surface position, which is why it is still mobile. In our analysis, this means that the surface position of WHAT is not an appropriate merging site for this *wh*-phrase because the embedded C fails to check off the strong *wh*-feature of WHAT.

The above account raises an interesting question: Why is the Hungarian counterpart allowed? Our account implies that in Hungarian, a contentful *wh*-phrase need not undergo any further movement in covert syntax, being licensed in its surface position. This is in fact what Horvath (1997) claims. According to her, the WH-expletive in Hungarian is a *wh*-form of an ordinary expletive which is replaced by its CP associate, not by the contentful *wh*-phrase itself. Thus, the discussion in this section supports the view that the *wh*-scope marking construction should not be treated in a unified manner across languages (see Horvath 1997, 2000, among others).

## 7. Conclusion

Our investigation started with a review of Collins’ (1991) complementizer hypothesis for *how come* in English. We examined two other kinds of adjunct *wh*-phrases, demonstrating that the restrictions on *how come* are not unique to this *wh*-element. Based on this fact, we pursued an alternative analysis of *how come* as well as other adjunct *wh*-phrases in a cross-linguistic perspective. The main proposal of the paper capitalized

on the fact that the languages under investigation are *wh*-fronting languages. In fact, when we examined a *wh*-in-situ language, Japanese, the distribution of WHAT turned out to be parallel to that of regular adjunct *wh*-phrases.

The specifics of our proposal involve feature strength in the sense of Chomsky (1995: chapter 4) and the probe-goal system. A single lexical item WHAT displays distinct properties in *wh*-fronting languages and in a *wh*-in-situ language, for which our analysis provides an explanation. As discussed in section 6.2, Chomsky, in his recent writings (see Chomsky 2000), has attempted to eliminate the concept of feature strength altogether. The material discussed here presents an empirical challenge for such a move.

## References

- Aoun, Joseph, and Y.-H.A. Li. 1993. *Syntax of Scope*. Cambridge: MIT Press.
- Bošković, Željko. 1999. Multiple *wh*-fronting and economy of derivation. *Proceedings of WCCFL 16*, 49-65. Stanford: CSLI.
- Bošković, Željko. 2000. Sometimes in specCP, sometimes in-situ. *Step by Step: Essays on Minimalism in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 53-88. Cambridge: MIT Press.
- Bošković, Željko. 2002. A-movement and the EPP. *Syntax* 5.3:167-218.
- Chomsky, Noam. 1973. Conditions on transformations. *A Festschrift for Morris Halle*, ed. by Stephen Anderson and Paul Kiparsky, 232-286. New York: Holt, Rinehart and Winston.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. *The View from Building 20*, ed. by Ken Hale and Samuel Keyser, 1-52. Cambridge: MIT Press.
- Chomsky, Noam. 1994. *Bare Phrase Structure*. MIT Occasional Papers in Linguistics 5. Cambridge: MIT.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. *Step by Step: Essays on Minimalism in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89-155. Cambridge: MIT Press.
- Chomsky, Noam. 2001a. Derivation by phase. *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52. Cambridge: MIT Press.
- Chomsky, Noam. 2001b. Beyond explanatory adequacy. *MIT Occasional Papers in Linguistics* 20. Cambridge: MIT.
- Collins, Chris. 1991. Why and how come. *More Papers on Wh-Movement*, 31-45. MIT Working Papers in Linguistics 15. Cambridge: MIT.
- Dikken, Marcel den, and Anastasia Giannakidou. 2002. From *hell* to polarity: “Aggressively

- non-d-linked” *wh*-phrases as polarity items. *Linguistic Inquiry* 33:31-61.
- Epstein, Samuel David. 1998. Overt scope marking and covert verb-second. *Linguistic Inquiry* 29:181-227.
- Grewendorf, Günther. 2001. Multiple *wh*-fronting. *Linguistic Inquiry* 32:87-112.
- Harada, Shinichi. 1973. Counter equi NP deletion. *Annual Bulletin of the Research Institute of Logopedics and Phoniatrics* 7, 113-147. Tokyo: University of Tokyo.
- Hornstein, Norbert. 1995. *Logical Form*. Oxford: Blackwell.
- Horvath, Julia. 1997. The status of ‘*wh*-expletives’ and the partial *wh*-movement construction in Hungarian. *Natural Language and Linguistic Theory* 15:509-572.
- Horvath, Julia. 2000. On the syntax of ‘*wh*-scope marker’ constructions: Some comparative evidence. *Wh-Scope Marking*, ed. by Uli Lutz, Gereon Müller, and Arnim von Stechow, 271-316. Amsterdam: John Benjamins.
- Kurafuji, Takeo. 1997. Case checking of accusative *wh*-adjuncts. *Proceedings of the Eighth Student Conference in Linguistics*, 253-271. MIT Working Papers in Linguistics 31. Cambridge: MIT.
- Lasnik, Howard. 1999. On feature strength: Three minimalist approaches to overt movement. *Linguistic Inquiry* 30:197-218.
- Lasnik, Howard, and Mamoru Saito. 1984. On the nature of proper government. *Linguistic Inquiry* 15:235-289.
- Lasnik, Howard, and Mamoru Saito. 1992. *Move  $\alpha$* . Cambridge: MIT Press.
- McDaniel, Dana. 1989. Partial and multiple *wh*-movement. *Natural Language and Linguistic Theory* 7:565-604.
- Pesetsky, David. 1988. *Wh*-in-situ: Movement and unselective binding. *The Representation of (IN)definiteness*, ed. by Eric Reuland and Alice ter Meulen, 98-129. Cambridge: MIT Press.
- Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge: MIT Press.
- Saito, Mamoru. 1994. Additional-*wh* effects and the adjunction site theory. *Journal of East Asian Linguistics* 3:195-240.
- Sobin, Nicholas. 1997. Agreement, default rules, and grammatical viruses. *Linguistic Inquiry* 28:318-344.

[Received 4 January 2002; revised 21 March 2003; accepted 7 July 2003]

Faculty of Language and Culture  
Osaka University  
1-8 Machikaneyama Toyonaka  
Osaka 560-0043, Japan  
ochi@lang.osaka-u.ac.jp

## *How Come* 與其他附加語 *wh* 疑問詞組： 跨語言研究

越智正男

大阪大學

本文探討詢問理由的三種附加語 *wh* 疑問詞組，即英語的 “*how come*”、 “*why the hell*”，以及出現在一些語言中詢問理由的“什麼”。這三種詞組受到幾個共同的限制：首先，不能建立「長距相依」(long-distance dependency) 的關係；其次，不能出現在多重疑問詞問句；第三，與量化詞一起出現時，其範域沒有寬域、窄域等不同。對於這些附加語 *wh* 詞組，我們以「屬性強度」(feature strength) 與「搜尋-目標系統」(probe-goal system) 為基礎，提出了一致的分析。

關鍵詞：反語境連結疑問詞組，屬性強度，多重疑問詞問句，搜尋-目標系統