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## "Partial" Wh-movement

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**"Partial" Wh-Movement\*****1 Introduction**

This paper re-examines a type of wh-movement called partial wh-movement. Partial wh-movement refers to a type of wh-movement found in languages like German and Romani, as discussed in McDaniel (1989). There are two defining characteristics of partial wh-movement: (i) a wh-word is moved "half-way", landing at a Spec of CP which is not associated with the scope of the wh-word; (ii) a scope marker appears at the CP where the wh-word is interpreted as taking scope.

In this paper, I explore an analysis of partial wh-movement under the Minimalist Program. I suggest that partial wh-movement involves overt movement of part of a wh-word (i.e., partial), namely, the wh-feature of a wh-word. I will show that the feature movement account can provide some natural explanations to questions raised by the phenomenon of partial wh-movement (section 3). Further, I will compare German type of partial wh-movement with the Hindi type, arguing that the latter does not involve overt feature movement (section 4). I briefly discuss the consequence of an overt feature movement analysis in section 5.

**2 Basic data**

In German, as discussed in McDaniel (1989), a wh-word which is supposed to move to a [+wh] CP to form a wh-question can in fact move to an intermediate CP, which is [-wh]. The scope of the wh-word is then marked by a scope marker *was*. It should be noted that this scope marker is homophonous with the wh-word *was* 'what'.

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(1b) is an example of partial wh-movement in German.<sup>1</sup>

- (1) =McDaniel (1989, ex. 7a-b)
- a. [Mit wem]<sub>i</sub> glaubt [<sub>IP</sub>Hans [<sub>CP</sub> t<sub>i</sub> dass [<sub>IP</sub>Jakob jetzt t<sub>i</sub> spricht]]]  
 with whom think Hans that Jakob now talking  
 'With whom does Hans think that Jakob is now talking?'
- b. was<sub>i</sub> glaubt [<sub>IP</sub> Hans [<sub>CP</sub> [mit wem]<sub>i</sub> [<sub>IP</sub> Jakob jetzt t<sub>i</sub> spricht]]]  
 WH think Hans with whom Jakob now talking  
 'With whom does Hans think that Jakob is now talking?'

As we can see in (1), the wh-phrase *mit wem* 'with whom' can move from the embedded clause to the matrix or it can stay in the intermediate Spec of CP with the scope marker *was* in the matrix, marking its scope. Note that the embedded Spec of CP does not normally host a [+wh] element since the verb 'to think' does not take an embedded question.<sup>2</sup>

If there is more than one embedding involved, the scope marker *was* appears in every intermediate Spec of CP between the matrix Spec of CP and the wh-phrase. Hence, a clear locality effect is observed.

- (2) =McDaniel (1989, ex.25a-b)
- a. [mit wem]<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> t<sub>i</sub> dass [<sub>IP</sub> Hans meint [<sub>CP</sub> t<sub>i</sub> dass  
 with whom believe you that Hans think that  
 [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]  
 Jakob talked has  
 'With whom do you believe that Hans thinks that Jakob talked?'
- b. was<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> [mit wem]<sub>i</sub> [<sub>IP</sub> Hans meint [<sub>CP</sub> t<sub>i</sub> dass  
 WH believe you with whom Hans think that  
 [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]  
 Jakob talked has

<sup>1</sup> I will gloss the scope marker as WH, to avoid confusion with the gloss for the true wh-phrase *was*.

<sup>2</sup> As McDaniel (1989) argues, the sentence in (1b) does not consist of two questions. 'What does Hans think?' and 'With whom is Jakob talking?' The embedded clause does not reflect a verb second order and thus cannot be interpreted as a matrix question.

- c. was<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> was<sub>i</sub> [<sub>IP</sub> Hans meint [<sub>CP</sub> [mit wem]<sub>i</sub>  
 WH believe you WH Hans think with whom  
 [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]  
 Jakob talked has
- d. \*was<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> dass [<sub>IP</sub> Hans meint [<sub>CP</sub> [mit wem]<sub>i</sub>  
 WH believe you that Hans think with whom  
 [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]  
 Jakob talked has

In (2b), the wh-phrase has moved to the highest embedded Spec of CP. There is no other Spec of CP between the scope marker and the wh-phrase. In (2c), the wh-phrase is in the lowest embedded Spec of CP and there is one Spec of CP between the matrix scope marker and the wh-phrase. This Spec of CP is also filled with the scope marker *was*. As we can see from (2d), if this Spec of CP is not filled with *was*, the sentence becomes ungrammatical.

It should be noted that there is an argument-adjunct asymmetry in extractions out of a tensed embedded sentence in German. Arguments cannot be extracted out of a tensed clause while adjuncts can. Thus, we see that adjuncts have "optional" partial wh-movement (i.e., adjuncts can move out of a tensed clause directly or they can use the partial movement strategy) as in (1), while arguments must have partial wh-movement when a tensed clause is involved, as shown in (3). I will not deal with this particular asymmetry in this paper. See McDaniel (1989) for an account.

- (3) = McDaniel (1989, ex. 13, 17)
- a. ?\*wen<sub>i</sub> glaubt [<sub>IP</sub> Hans [<sub>CP</sub> t<sub>i</sub> dass [<sub>IP</sub> Jakob t<sub>i</sub> anruft]]]  
 'Whom does Hans think that Jakob is calling?'
- b. was<sub>i</sub> glaubt [<sub>IP</sub> Hans [<sub>CP</sub> wen<sub>i</sub> [<sub>IP</sub> Jakob t<sub>i</sub> anruft]]]  
 WH think Hans whom Jakob is calling  
 'Whom does Hans think that Jakob is calling?'

Several questions arise given this set of data:

- (4) a. What is a scope marker? Is it base-generated in Spec of CP or is it moved there?  
 b. Why does the wh-phrase move to an intermediate CP?  
 c. Why can a [-wh] Spec of CP host a wh-phrase?  
 d. What is the locality restriction associated with the scope marker?

I will explore an account of the partial wh-movement phenomenon in sections 3.1-3.5, providing answers to these questions. McDaniel's account will be discussed in 3.6.

### 3 Feature movement as "partial" movement

#### 3.1 The scope marker

Consider first the nature of the scope marker. First, it differs from a "true" wh-phrase in a couple of ways: (a) it does not license wh-in-situ (in comparison with "true" wh-phrases in multiple questions), as shown by the contrast between (5) and (6); and (b) it has to appear in every immediate Spec of CP that is not occupied by a wh-phrase (as we have seen in (2c-d)).

- (5) McDaniel (1989, ex. 43b)  
 Wann<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> t<sub>i</sub> dass [<sub>IP</sub> Hans t<sub>i</sub> an welcher  
 When think you that Hans at which  
Universität studiert hat]]  
 university study has  
 'When do you think that Hans has studied at which university?'  
 (6) \*was<sub>i</sub> glaubst [<sub>IP</sub> du [<sub>CP</sub> was<sub>i</sub> [<sub>IP</sub> Hans meint [<sub>CP</sub> was<sub>i</sub> [<sub>IP</sub> Jakob  
 wh believe you wh Hans think wh Jakob  
[mit wem]<sub>i</sub> gesprochen hat]]  
 with whom talked has  
 'With whom do you believe that Hans thinks that Jakob has  
 talk?'

In (5), the second wh-word stays in-situ and in (6), with partial wh-movement, the "real" wh-phrase cannot stay in-situ despite the fact that the scope marker appears in every embedding. In other words, the appearance of the scope marker is closely connected with the "half-way" movement of the wh-phrase.

Assuming that the C<sup>0</sup> of a wh-question has a [+wh] feature to be checked (Chomsky 1995a), it appears that the scope marker can indeed check this feature. However, the problem that arises is in the cases where more than one scope marker appears (as in (2c)), just one of them seems to be checking a [+wh] feature. This is also associated with the question of why the "true" wh-phrase undergoes movement, if the scope marker can check the strong feature in C<sup>0</sup>.

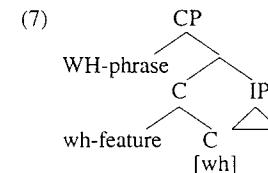
bearing in mind that the wh-phrase does not move all the way to the [+wh] CP. This is related to the connection between the scope marker and the wh-phrase.

The connection between the scope marker and the wh-phrase has been considered to be an expletive-associate chain relationship (see McDaniel 1989). However, such a relationship may be problematic in accounting for the partial wh-movement strategy (see section 3.6 below; see also Dayal 1994, and Sabel 1996).

#### 3.2 The proposal

I propose that the scope marker and the wh-phrase are connected because they are indeed the same element, with the scope marker being the wh-feature. Partial wh-movement then involves "half-way" movement of the wh-phrase and overt movement of the wh-feature. In other words, partial wh-movement involves movement of part of the wh-word (i.e., the wh-feature part). Before I discuss the proposal, I will state the following assumptions associated with feature and category movement under the Minimalist Program.

Following Chomsky (1995a, class lecture fall 1995), I assume that overt wh-movement involves the movement of the wh-feature and subsequent movement of the category for PF convergence. Further, Chomsky proposes that after category undergoes movement, a repair strategy takes place to ensure that the feature(s) will not be scattered. Consider the configuration in (7).



Note here that I leave aside the question of whether movement of the category is adjunction or substitution (see Fukui and Saito (to appear)). As shown in (7), the wh-feature (strictly speaking, the set of formal features including the wh-feature) moves to C<sup>0</sup> to check the [+wh] feature of C<sup>0</sup>. The wh-phrase then moves to CP, enabling the repair strategy to take place. Essentially the repair strategy will ensure that the features are not scattered. One way to understand the repair strategy is that it puts the feature bundle back

into the category. Chomsky (class lecture fall 1995) assumes that the repair strategy takes place automatically and any subsequent operation looks at the output of the repair.

Let us now turn to an account of partial wh-movement as overt feature movement. Consider first the simple example in (3b), repeated below.

- (3) b. *was<sub>i</sub> glaubt* [<sub>IP</sub> Hans [<sub>CP</sub> *wen<sub>i</sub>* [<sub>IP</sub> Jakob *t<sub>i</sub>* anruft]]]  
 WH think Hans whom Jakob is calling  
 'Whom does Hans think that Jakob is calling?'

I propose that (3b) has the following derivation:

- (8) [<sub>CP</sub> [FF] glaubt [<sub>IP</sub> Hans [<sub>CP</sub> wen [<sub>C<sup>0</sup></sub> t<sub>[FF]</sub>] [<sub>IP</sub> Jakob t<sub>wen</sub> anruft]]]]

In (8), the feature bundle containing the *wh*-feature moves to the embedded  $C^0$  and the *wh*-word *wen* moves to the embedded CP in order for the repair strategy to take place. Then the feature bundle further undergoes movement, stranding the *wh*-word in the embedded CP. The feature bundle is later spelled out as *was* in German. That is, the language has a default *wh*-word which will be used to spell out the feature bundle containing the *wh*-feature.

Several questions naturally come to mind with the derivation in (8): (a) Why can the feature bundle be scattered or separated from its category? (b) What happens to the category (i.e., the *wh*-word) without the feature bundle? and (c) If the features can be separated from the *wh*-word, why can't they do so when the *wh*-word is *in situ*? I will first consider questions (b) and (c) as I believe the answers to these questions are related. I leave question (a) until the next section.

With respect to question (b), one immediate possibility is that if the language allows the features to be scattered, the *wh*-word without the features does not cause any problem either. However, this will leave question (c) unanswered: if a *wh*-word can be content without its features, nothing prevents the features to be separated from an in-situ *wh*-word (without subsequent movement). I suggest that movement of the feature bundle leaves a copy, just like movement of categories (cf. Chomsky 1993). In other words, the representation for (3b) should be (9).

- (9) [<sub>CP</sub> [FF] glaubt [<sub>IP</sub> Hans [<sub>CP</sub> wen [<sub>C<sup>0</sup></sub> [FF] [<sub>IP</sub> Jakob t<sub>wen</sub> anruft]]]]]  
copy

This view of feature movement essentially entails that the repair strategy does not necessarily take place immediately after category movement. In (9), the feature bundle moves to the matrix before repair strategy takes place in the embedded clause. Since feature movement leaves a copy of the feature bundle, the repair can take place in the embedded clause. In other words, leaving a copy of the feature bundle is necessary for PF-convergence.

Consider now why the "separation" of the feature bundle and the wh-word cannot take place while the wh-word is in-situ. That is, why is it the case that the scope marker *was* in German does not license wh-in-situ? Given the current analysis regarding feature movement, the question that arises is why category movement needs to take place if feature movement leaves a copy. I think that the answer relates to the structure in which the repair strategy can take place. Consider the structure in (7) again. Category movement of the wh-word takes place in order to "activate" the repair. If the category were to stay in-situ, the wh-word and the copy of the feature bundle will not be in the same configuration as in (7). Thus, I suggest that the repair strategy can only take place in a configuration such as (7) (which is similar to a checking configuration). This naturally excludes the licensing of wh-in-situ by scope markers.

In short, the *wh*-feature is attracted by the strong  $C^0$  feature to undergo movement. It first moves to the lower  $C^0$ . The category movement then follows due to the fact that repair cannot take place if it does not. The feature bundle undergoes subsequent movement to the matrix  $C^0$ , checking the  $C^0$  feature and it is then spelled out at PF as *was*.

Before we turn to the question of why such scattering of features is possible in German, but not in English, two more issues remain: (i) the multiple occurrence of the scope marker in certain cases; and (ii) the different landing site of the wh-phrase. Regarding (i), we have seen in (2b) that if there is more than one embedding, the scope marker appears in every CP between the [+wh] C<sup>0</sup> and the wh-phrase. Given the analysis proposed here, it has to do with successive cyclic movement of the feature bundles from one C<sup>0</sup> to another C<sup>0</sup>, leaving a copy behind.<sup>3</sup> All copies are spelled out at

<sup>3</sup> For discussions regarding successive cyclic nature of movement within the Minimalist Program, see Aghayani (1997) and Takeda (1997). One potential problem associated with the successive cyclic movement of the feature bundle here is that it seems to “skip” the  $X^0$ s between the  $C^0$ s. It is perhaps the case

PF. In other words, the locality effects are associated with violations of successive cyclic movement. Turning now to the landing site of the wh-phrase, I have suggested in the spirit of Chomsky (1995a) that the category movement is for PF convergence. This in itself however does not explain why the wh-phrase can appear at different CPs.

Consider how sentences (2b) and (2c) are derived, the former with the wh-phrase in the highest embedding while the latter in the lowest embedding. Under this analysis, the difference between the two is that in the former, category movement takes place one more time (from the lowest embedded CP). This difference, I think, is related to when the repair takes place. Consider the derivations as schematized in (10a-b).

- (10) a. [<sub>CP</sub><sub>1</sub> [FF] ... [<sub>CP</sub><sub>2</sub> wh-phrase [FF] ... [<sub>CP</sub><sub>3</sub> .. t<sub>wh-phrase</sub> ... [<sub>IP</sub> ...  
copy  
b. [<sub>CP</sub><sub>1</sub> [FF] ... [<sub>CP</sub><sub>2</sub> [FF] ... [<sub>CP</sub><sub>3</sub> wh-phrase [FF] ... [<sub>IP</sub> ...  
copy copy

In (10a), the feature bundle first moves to  $CP_3$ , followed by movement of the wh-phrase to  $CP_3$ . Assume for now that repair takes place immediately and thus the feature bundle is "put back" into the wh-phrase. The next step is that the feature bundle undergoes further movement, to  $C_2$ . I assume that since repair has already taken place, category movement must take place again, to leave a category trace (or copy) in  $CP_3$ . In  $CP_2$ , feature movement again takes place. This time, it takes place before repair, allowing the wh-phrase to be stranded. In other words, after repair has taken place, the wh-phrase and the feature bundle are no longer in the same configuration as in (7). Category movement is therefore necessary, on a par with wh-in-situ. On the other hand, in (10b), at the  $CP_3$  level, feature movement takes place before repair, allowing the wh-phrase to be stranded at this level.

In other words, the different landing site of the *wh*-phrase (i.e., the category) relates to the repair strategy. One may question whether or not computation allows such an option for the repair strategy. I suggest that since the two different orders of application does not relate to economy, the option is available

that the movement of features is sensitive to the category of the attractor. The other possibility is that only the ones in  $C^0$  will be spelled out.

### 3.3 The nature of *wh*-words

The biggest puzzle associated with partial wh-movement is perhaps the impossibility of partial wh-movement in many languages, such as English. If the analysis proposed here is on the right track, one crucial difference must lie within the wh-words. Another difference may relate to the availability of a default wh-word (for spell-out feature bundles containing [+wh]). That is, German wh-words are such that they allow the wh-feature to be separated from the rest of the wh-word and is later spelled out as a default wh-word.

The question that arises then is whether German *wh*-words have any special characteristics. It turns out that German *wh*-words are similar to Japanese *wh*-words in that the *wh*-words can serve as the morphological base for indefinites. Consider the Japanese and German paradigms below.

- (11) Japanese

wh-phrases		∃-quantifiers	
dare	'who'	dare-ka	'someone'
nani	'what'	nani-ka	'something'
doko	'where'	doko-ka	'somewhere'
itsu	'when'	itsu-ka	'sometime'
naze	'why'	naze-ka	'for some reason'
dono N'	'which N'	dono N'-ka	'some N'

- (12) German

wh-phrases		$\exists$ -quantifiers	
wer	'who'	irgendwer	'someone'
was	'what'	irgendwas	'something'
wann	'when'	irgenwann	'sometime'
wo	'where'	irgendwo	'somewhere'
welche	'which N'	irgendwelche	'some kind of'

(11) illustrates the well-known fact in Japanese that the *wh*-words in combination with the suffix *-ka* can derive a set of indefinites (see Kuroda 1969, Nishigauchi 1990 among others). We see from (12) that German is similar to Japanese in that when the *wh*-words are attached with *irgend*, a set of indefinites are derived.

In the spirit of Cheng (1991) and Watanabe (1991) among others, I suggest that paradigms of the kind in (11) and (12) suggest that the *wh*-words consist of a core as well as a *wh*-part. The *wh*-part can be dissociated with the core, as in cases where another

quantificational force is present (such as *-ka* and *irgend-*). More importantly, the *wh*-part is essentially the *wh*-feature, which is not phonologically realized when it is combined with the core. Schematically, we may represent Japanese *dare* 'who' and German *wer* 'who' as in (13).

- (13) a. [dare- $\emptyset$ ]      b. [ $\emptyset$ -wer]  
           core-*wh*                wh-core

I propose that it is this apparent "separation" between the core and the *wh*-feature which allows the *wh*-feature to be scattered when undergoing Move. I will address questions related to other languages in section 5.

### 3.4 Island effects

In the analysis proposed here, the scope marker and the "real" *wh*-phrase are linked up by movement. This differs from proposals in McDaniel (1989), Gammon (1994) and Dayal (1994). I show here that data in German involving islands and partial *wh*-movement can be better explained under a movement analysis.

Gammon (1994) shows that there is an asymmetry between the chain formed by the scope marker and the *wh*-phrase and the one formed by a *wh*-phrase and its trace. In particular, the former chain is sensitive to both strong and weak islands while the latter is only sensitive to weak islands if arguments are involved (in contrast with adjuncts). In other words, the scope marker related chain is on a par with an adjunct chain. (14)-(18) are examples with partial *wh*-movement which involves a scope marker, illustrating the violation of both strong (14)-(16) and weak islands (17)-(18) (from Gammon 1994).

Subject island

- (14) \*[<sub>CP</sub> was ist [<sub>IP</sub> [<sub>CP</sub> [mit wem]<sub>i</sub> [<sub>IP</sub> Hans t<sub>i</sub> gesprochen hat]]  
           WH is                with whom Hans spoken has  
           schade ]]  
           a-pity

Complex NP island

- (15) \*[<sub>CP</sub> was hat [<sub>IP</sub> Peter [<sub>NP</sub> die Behauptung [<sub>CP</sub> [mit wem]<sub>i</sub>  
           WH has Peter the claim                with whom  
           Hans t<sub>i</sub> gesprochen hat]] geglaubt]]  
           Hans spoken hat believed

Adjunct island

- (16) \*[<sub>CP</sub> was hat [<sub>IP</sub> Hans das Auto gesehen [<sub>CP</sub> bevor [er glaubte  
           WH has Hans the car seen                before he believed  
           [[mit wem]<sub>i</sub> Peter t<sub>i</sub> sprach]]]]]  
           with whom Peter spoke

Wh-island

- (17) \*[<sub>CP</sub> was fragt [<sub>IP</sub> sie sich [<sub>CP</sub> warum<sub>j</sub> [<sub>IP</sub> Hans t<sub>j</sub> glaubt  
           WH asks she herself why Hans believes  
           [<sub>CP</sub> [mit wem]<sub>i</sub> [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]]]  
           with whom Jakob spoken has

Factive island

- (18) ??[<sub>CP</sub> was hast [<sub>IP</sub> du bedauert [<sub>CP</sub> [mit wem]<sub>i</sub> [<sub>IP</sub> du t<sub>i</sub>  
           WH have you regretted with whom you  
           gesprochen hast]]]]]  
           spoken have

Note that in all these cases, the "real" *wh*-phrase did not get extracted out of the island. Under the analysis proposed here, it is the feature bundle that is extracted out of the island. Further, the feature bundle (i.e., the scope marker) is associated with an argument in all these cases. Now consider the extraction of arguments out of weak islands (examples from Gammon 1994).<sup>4</sup>

- (19) ?[<sub>CP</sub> [mit wem]<sub>i</sub> fragt [<sub>IP</sub> sie sich [<sub>CP</sub> warum<sub>j</sub> [<sub>IP</sub> Hans t<sub>j</sub> glaubt  
           with whom asks she herself why Hans believes  
           [<sub>CP</sub> dass [<sub>IP</sub> Jakob t<sub>i</sub> gesprochen hat]]]]]]]  
           that Jakob spoken has
- (20) [<sub>CP</sub> [mit wem]<sub>i</sub> hast [<sub>IP</sub> du bedauert [<sub>CP</sub> dass [<sub>IP</sub> du t<sub>i</sub>  
           with whom have you regretted that you  
           gesprochen hast]]]]]  
           spoken have

(19) and (20) show that extraction of *mit wem* 'with whom' out of weak islands does not lead to ungrammaticality.

<sup>4</sup> PP phrases such as *mit wem* 'with whom' seem to act as arguments in terms of island effects but are on a par with adjuncts with respect to the tensed clause restriction, i.e., can extract out of a tensed clause.

In exploring an account for this asymmetry, Gammon considers how the scope marker chain can be interpreted as a non-referential chain in contrast with argument/referential chain. Given the analysis developed in this paper, it appears that "pure feature movement" must be treated on a par with adjunct movement. That is, movement of the feature bundle alone (without subsequent category movement) is considered to be on a par with adjunct movement. The weak island effects displayed above can thus be explained.

### 3.5 Multiple questions

There is one remaining issue, which concerns multiple questions, as well as the spell-out of the feature bundle. Consider (21) and (22). (21) is the partial-strategy variant of (22). We see that the first wh-phrase can undergo either "full" wh-movement or "partial" wh-movement and the second wh-phrase is in-situ (examples from McDaniel 1989).

- (21) *was<sub>i</sub> glaubst* [<sub>IP</sub> *du* [<sub>CP</sub> *wann<sub>i</sub>* [<sub>IP</sub> *Hans t<sub>i</sub> an welcher*  
       *wh think*       *you*       *when*       *Hans*   *at which*  
       *Universität studiert hat*]]]  
       *university studied has*  
       'When do you think Hans studied at which university?'
- (22) *wann<sub>i</sub> glaubst* [<sub>IP</sub> *du* [<sub>CP</sub> *t<sub>i</sub> dass* [<sub>IP</sub> *Hans t<sub>i</sub> an welcher*  
       *when think*       *you*       *that*       *Hans*   *at which*  
       *Universität studiert hat*]]]  
       *university studied has*  
       'When do you think Hans studied at which university?'

The grammaticality of (21) is expected since the second wh-phrase can stay in-situ in a typical multiple wh-question and it is simply the case that for the wh-word *wann* 'when', the wh-feature undergoes movement to the matrix, leaving the wh-word in the embedded CP.

Consider now the sentences in (23). In (23a)-(23c), the first wh-phrase undergoes "full" wh-movement and the second wh-phrase undergoes "partial" wh-movement.

- (23) a. \**wer<sub>i</sub> glaubt* [<sub>IP</sub> *t<sub>i</sub>* [<sub>CP</sub> *dass* [<sub>IP</sub> *ich meinte* [<sub>CP</sub> [*mit wem*]<sub>j</sub>  
       *who believe*       *that*       *I*       *thought*       *with whom*  
       [<sub>IP</sub> *Jakob t<sub>j</sub> gesprochen hat*]]]]]  
       *Jakob talked has*  
       'Who believe that I thought that Jakob talked with whom?'
- b. *wer<sub>i</sub> glaubt* [<sub>IP</sub> *t<sub>i</sub>* [<sub>CP</sub> [*mit wem*]<sub>j</sub> [<sub>IP</sub> *ich meinte* [<sub>CP</sub> *t<sub>j</sub> dass*  
       [<sub>IP</sub> *Jakob t<sub>j</sub> gesprochen hat*]]]]]  
       *Jakob talked has*
- c. *wer<sub>i</sub> glaubt* [<sub>IP</sub> *t<sub>i</sub>* [<sub>CP</sub> *was* [<sub>IP</sub> *ich meinte* [<sub>CP</sub> [*mit wem*]<sub>j</sub>  
       [<sub>IP</sub> *Jakob t<sub>j</sub> gesprochen hat*]]]]]  
       *Jakob talked has*

(23a) contrasts with (23b)-(23c) in that the wh-phrase *mit wem* in (23a) only moves to the lower embedding, leaving the highest embedded CP empty. In (23b), the wh-phrase moves to the highest embedding and (23c) has spelled out *was* in the highest embedding. The questions that are raised by these sentences are: (i) in the grammatical (23b) and (23c), there is no realization of the feature bundle in the matrix (i.e., together with *wer* 'who'); and (ii) if wh-words can stay in-situ in multiple questions, why are they moved in (23b) and (23c)?

The question in (i) is associated with the nature of the spell-out operation. Note that in all the other examples with an overt *was*, there is no other wh-word in the CP. In other words, the feature bundle is spelled out when it is alone in the projection, with nothing to realize its existence. In contrast, in both (23b) and (23c), there is a wh-word in the matrix CP, and this is sufficient for the feature bundle to be present in the CP without having to be spelled out. In other words, the spell-out of features is a last resort mechanism. The feature is allowed to be scattered and not spelled out only if there is some other wh-phrase present overtly marking the sentence as a question (see Cheng 1991). As for the question in (ii), McDaniel notes that not all speakers accept multiple movement of wh-words. For speakers who allow such multiple movement, they might prefer overt movement of features rather than covert movement of features (assuming that in-situ wh-words have covert movement of features).

### 3.6 McDaniel (1989)

McDaniel (1989) argues that the scope marker *was* in German is a wh-expletive base-generated in the Spec of CP. To account for the



relationship between the scope marker and the wh-phrases, she proposes to define Wh-chains and a revision of the Wh-criterion (cf. Rizzi 1991) as in (24) and (25) respectively.

(24) Wh-Chains

A chain  $C = (a_1, a_2, \dots, a_n)$  is a Wh-chain iff:

- (i)  $\forall a_i, 1 \leq i < n, a_i$  locally A-bar binds  $a_{i+1}$ .
- (ii)  $\forall a_i, 1 \leq i \leq n, a_i$  is a Wh-element,
- (iii)  $a_n$  is a variable in IP-internal position, and
- (iv) for any scope marker  $a_i, 1 \leq i < n, (a_{i+1}, \dots, a_n)$  contains a true Wh-phrase.

(25) Wh-criterion

If a language has syntactic Wh-movement, then, for every Cspec  $x$  of a [+Wh] CP, there must be a Wh-chain such that its head is in  $x$ ; and for every Wh-phrase  $y$  in A-bar position, there must be a Wh-chain which contains  $y$  and whose head is in the Cspec from which  $y$  takes scope.

The definition of Wh-chains essentially ensures that if there is a scope marker in the sentence, there must be a "true" Wh-phrase associated with it (which is in turn associated with a variable). The scope marker is thus a legitimate member of the chain containing a wh-phrase. The revised Wh-criterion ensures that if a wh-phrase shows up in a [-wh] Spec of CP, there must be a scope marker in a [+wh] Spec of CP from which the wh-phrase takes scope.

McDaniel proposes that the ungrammaticality in (2b) (i.e., in cases where the scope marker and the wh-phrase has an intervening CP without a scope marker) is an instance of Subjacency violations with Subjacency as a condition on representation. It should be noted that typically Subjacency violations are mild violations. In the examples that we have seen concerning island violations, partial wh-movement generates strong violations rather than mild violations. It is thus unclear how a Subjacency account can explain the strong violations. Furthermore, as we have seen, partial wh-movement is sensitive to both strong and weak islands. Again, it is unclear how McDaniel can account for it using a Subjacency account.

Aside from the problems dealing with extraction data, McDaniel's definition on Wh-chains as well as Wh-criterion are proposed to solely deal with the phenomenon associated with the presence of a scope marker. Consider the definition in (24iv) for example. This is necessary to ensure that the scope marker is in a

higher/c-commanding position than the "true" wh-phrase. And with respect to the revised Wh-criterion, it is there to explain the fact that we have a "true" wh-phrase sitting in a [-wh] Spec of CP. Both of these naturally follow from the proposal put forth here. With a feature movement analysis, it naturally follows that the scope marker (i.e., the spelled out feature bundle) will end up in a position higher and c-commanding the "true" wh-phrase. In addition, since the feature bundle being extracted crucially involved the wh-feature, the wh-phrase that is left behind no longer has the wh-feature and therefore will not cause any problem for a [-wh] CP.<sup>5</sup> In other words, no additional definitions or assumptions are needed under this account.

#### 4 Seemingly "partial" movement languages

From the data in German on partial wh-movement, we can summarize the surface properties of partial wh-movement as follows:

- (26) (i) Wh-words are not fronted to the clause from which they take scope. Instead, they are fronted to an intermediate position.
- (ii) An overt scope marker is in the position which the wh-word is supposed to land.
- (iii) A locality restriction ensures that a scope marker appears in every intermediate CP between the highest clause and the wh-word.

(i) and/or (ii) have been used as heuristics in grouping languages as a partial wh-movement language: McDaniel (1986) considers Iraqi Arabic and Palauan to be possible partial wh-movement languages based on (i), and Mahajan (1990) and subsequently Dayal (1994) consider Hindi to be on a par with German based on (ii) (see also Sabel 1996 for other seemingly partial movement languages).

<sup>5</sup> One may be concerned with the copy of the feature. However, it should be noted that under a copy theory of movement, the copies no longer have the same "status" as the original. In the account here, the copy essentially serves the phonological repair purpose. Thus, the fact that the feature bundle is gone from the wh-phrase does not affect the wh-phrase in this account.

I will briefly examine Hindi below showing that there are reasons to doubt that it has "partial" wh-movement of the kind we see in German.

#### 4.1 Wh-in-situ and fronting

It should be first pointed out that in Hindi, wh-words are allowed to stay in-situ or to undergo fronting. (27) shows that Hindi is similar to Chinese and Japanese in that it allows in-situ wh-words in both direct and indirect questions. (27) shows the fronting of wh-words.<sup>6</sup> Examples are from Mahajan (1990).

- (27) a. raam-ne *kis-ko* dekhnaa caahaa  
 Ram-erg who to see want  
 'Who did Ram want to see?'  
 b. raam-ne puuchaa [ki mohan-erg *kis-ko* dekhaa]  
 Ram-erg asked Mohan-erg who saw  
 'Ram asked who Mohan saw?'  
 (28) a. raam-ne puuchaa [ki *kisko* mohan-ne dekhaa]  
 Ram-erg asked who Mohan-erg saw  
 'Ram asked who Mohan saw.'  
 b. *kOn* raam-ne puuchaa [ki aayaa hE]  
 who Ram-erg asked has come  
 'Ram asked who has come.'

#### 4.2 Overt Scope Marker

Hindi uses an overt scope marker in certain situations: wh-words taking matrix scope are not allowed to stay in-situ in tensed clauses unless an overt scope marker is present:

<sup>6</sup> (28b) may seem like an impossible sentence given the fact that verbs like 'ask' require a [+wh] complement clause. However, assuming Saito's (1989) claim that scrambling can be undone at LF, this sentence will not be problematic.

#### (29) Hindi

- a. \*raam-ne kahaa ki *kOn* aayaa hE  
 Ram-erg said who has come  
 'Who did Ram say has come?'  
 b. \*raam-ne socaa ki *kOn* aayaa hE  
 Ram-erg thought who has come  
 'Who did Ram think has come?'

To rescue this sentence, the language employs something that has apparent affinity to *was* in German. *kyaa* 'what' is found in the matrix object position:

- (30) a. raam-ne *kyaa* kahaa ki *kOn* aayaa hE  
 Ram-erg WH said who come has  
 'Who did Ram say has come?'  
 b. raam-ne *kyaa* socaa ki ravii-ne *kis-ko* dekhaa  
 Ram-erg WH thought Ravi-erg who saw  
 'Who did Ram think that Ravi saw?'

However, there is an apparent difference between German and Hindi. In German, the overt scope marker is closely associated with the partial fronting of wh-words. In contrast, there is no direct connection between the presence of the scope marker and the fronting of the wh-words in Hindi. In contrast, we see the scope markers even when the wh-words are "in-situ".

We have seen that Hindi allows both wh-in-situ and wh-fronting. Following Mahajan (1990), I assume that wh-fronting in Hindi involves long distance scrambling of a wh-phrase (i.e., not to Spec of CP). Hence, wh-fronting is not fronting to Spec of CP; thus it can co-exist with wh-in-situ in the sense that the possibility of leaving wh-words in-situ does not preclude the fronting (scrambling) of wh-words. Furthermore, from the sentences in (27) as well as the fact that the wh-scope marker *kyaa* appears in an object position, it appears that Hindi is a wh-in-situ language. Hence, Hindi will not generate a structure comparable to German partial wh-movement cases. There will be no overt movement of the set of formal features to CP. The remaining question regarding Hindi is the relationship between the scope marker *kyaa* and the wh-word.

#### 4.3 Mahajan (1990) and Dayal (1994)

As mentioned above, the scope marker *kyaa* marks the scope of wh-words in tensed embedded clauses ((30b) is repeated below). Mahajan (1990) proposes that *kyaa* is the wh-counterpart of the expletive *yeh*, which optionally appears in sentences such as (31).

- (30b) raam-ne *kyaa* socaa ki ravii-ne kis-ko dekhaa  
 Ram-erg WH thought Ravi-erg who saw  
 'Who did Ram think that Ravi saw?'

- (31) raam-ne (yeh) socaa hi mohan cor hE  
 Ram-erg this thought Mohan thief is  
 Ram thought that Mohan is a thief.'

In (31), *yeh* appears in an object position and the tensed clause is extraposed to the right (for similar views on tensed complements in Hindi see also Davison 1984 and Dayal 1994). Under such views, *kyaa* is also an expletive in the object position. The difference between *kyaa* and *yeh* aside from the [+wh] feature of the former is that *kyaa* must be present when the embedded clause has a wh-word in it.

Mahajan (1990) considers the movement of the wh-words at LF in Hindi (and perhaps in other languages as well) to be adjunction to IP, on a par with Quantifier Raising. Further, for sentences involving *kyaa*, he proposes that the complement clause adjoins to *kyaa* at LF as an instance of expletive replacement (following Chomsky 1991). Note that *kyaa* questions share with German partial wh-movement in that when there are multiple embeddings with the wh-word in the most embedded clause, not only is *kyaa* obligatory in the matrix, it must be also present in every intermediate embedding, as shown in (32).

- (32) a.\*raam-ne socaa ki ravii-ne *kyaa* kahaa ki kOn sa aadmii  
 Ram-erg thought Ravi-erg KYAA said which man  
 aayaa thaa  
 came  
 b.\*raam-ne *kyaa* socaa ki ravii-ne kahaa ki kOn sa aadmii  
 Ram-erg KYAA thought Ravi-erg said which man  
 aayaa thaa  
 came

- c. raam-ne *kyaa* socaa ki ravii-ne *kyaa* kahaa ki  
 Ram-erg KYAA thought Ravi-erg KYAA said  
 kOn sa aadmii aayaa thaa  
 which man came  
 'Which man did Ram think that Ravi said came?'

Mahajan's explanation for the multiple *kyaa* appearance is that "...an overt *kyaa* is required (i) to absorb the -wh feature of COMP (ii) for the associate CP to adjoin." (p.171)

Dayal (1994) argues that Mahajan's account and or direct dependency accounts are problematic. In particular, they are problematic because of weak islands: sentences involving a scope marker appears to be sensitive to negative islands but not factive islands, both of which are weak islands. Consider the sentences below (I will discuss German negative islands below):

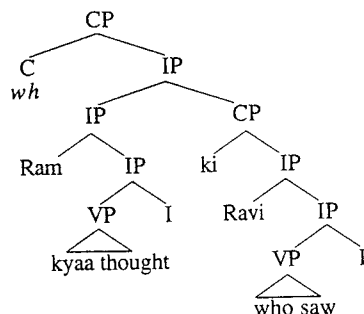
- (33) Utpal Lahiri (p.c.)  
 \*raam-ne *kyaa* nahii socaa ki ravii-ne kis-ko dekhaa  
 Ram-erg WH NEG thought Ravi-erg who saw  
 'Who did Ram think that Ravi saw?'

- (34) from Dayal (1994)  
 a. jaun *kyaa* jaantaa hai meri kis-se baat karegii  
 John WH knows Mary who-with will-talk  
 'Who does John know Mary will talk to?'  
 b. tum-ko *kyaa* pataa calaa meri *kyuuN* nahiiN aayegii  
 you-Dat WH discovered Mary why not will-come  
 'Why did you discover that Mary won't come?'

#### 4.4 A solution

I will argue here for an approach comparable to Rizzi's (1992) account of negative islands. Let us first consider how a typical *kyaa* question can be derived. Following Mahajan (1990) among others, I assume that the finite complement in a *kyaa* question is adjoined to IP. The structure of (30b) is (35).

(35)



Since Hindi is an in-situ language, the wh-feature of *kyaa* undergoes movement to the matrix C at LF. Note that the wh-feature of 'who' cannot move all the way to the matrix C due to the extraposition structure. Here I will assume that the wh-word 'who' in the embedded clause can be interpreted in-situ along the lines proposed in Reinhart (1993).

Turning now to the weak island effects. I have noted in section 3.4 that "pure feature movement" (i.e., movement of feature bundle not followed by subsequent category movement) can be considered on a par with adjunct movement. In other words, the movement of the wh-feature of *kyaa* crossing a weak island is expected to generate violations.<sup>7</sup> The problem raised by Dayal (1994) is particularly targeted towards the contrast between negative islands and factive islands. If we examine the two different islands, the contrast noted in Dayal (1994) follows immediately. In Hindi, *kyaa* questions violate negative islands but not factive islands, as shown by the contrast in (33) and (34) above. This contrast is not surprising given our analysis since movement of the wh-feature of *kyaa* does cross a negative island but not a factive island. Consider the factive examples in (34) again.

- (34)a. jaun *kyaa* jaantaa hai meri kis-se baat karegi  
John WH knows Mary who-with will-talk  
'Who does John know Mary will talk to?'

<sup>7</sup> This account leads to questions regarding wh-in-situ since all in-situ wh-words are supposed to have "pure feature movement". Due to the length of the paper, I will not be able to consider a full range of in-situ questions here.

- b. tum-ko *kyaa* pataa calaa meri *kyuuN* nahiiN aayegii  
you-Dat WH discovered Mary why not will-come  
'Why did you discover that Mary won't come?'

Regardless how one represents a factive island, it belongs to the embedded clause, which movement of the *kyaa* wh-feature will not cross.

Note that in German, as noted by Dayal (1994), questions involving the scope marker are also sensitive to negative islands:

- (36) \*was glaubst du nicht mit wem Maria gesprochen hat  
WH think you not with whom Maria spoken has  
'Who don't you think Maria has spoken to?'

As we have indicated earlier, partial wh-movement is also sensitive to factive islands (18). This shows again that German differs from Hindi and it further supports our analysis. In German, the movement of the wh-feature crosses the negative as well as the factive islands under our analysis, since *was* is the spell-out of the feature bundle associated with the wh-word in the sentence. In Hindi, *kyaa* is the expletive associated with an extraposed clause containing a wh-word.

In short, *kyaa*-questions do not have structures like *was*-questions in German. However, it appears that *kyaa*-questions indeed involve a Wh-expletive, though it is different from the type of Wh-expletive proposed in McDaniel (1989). Specifically, in McDaniel, Wh-expletives are associated with individual wh-words which are displaced. In Hindi, the Wh-expletive *kyaa* is associated with a clause which has a wh-word in it.

## 5 Conclusion

In the above sections, I have explored an analysis of partial wh-movement as overt feature movement. This analysis provides answers to the initial questions posed in section 2:

- (37) a. Wh-scope marker is the overt spell-out of wh-feature (i.e., feature bundle containing a wh-feature).  
b. Wh-feature undergoes successive cyclic movement, leaving copies at each embedded CP.  
c. The wh-phrase needs to undergo category movement for PF convergence (i.e., for the repair strategy to take place).

- d. A [-wh] CP can host a "half-way" moved wh-phrase because the actual wh-feature has left the wh-phrase.
- e. The locality effects displayed in partial movement is due to the successive cyclic nature of feature movement.

This analysis also raises several interesting issues. I will briefly point out three of them here. First, if this analysis is correct, it entails that there is overt feature movement without subsequent category movement. This is possible, according to the proposal here, only if the wh-word has a certain "morphological make-up". However, the requirement of such feature scattering may not be as simple. In Frisian, as discussed in Hiemstra (1986), there is also partial wh-movement. On the surface, it appears to be similar to the type we see in German:

- (38) wat tinke jo wa't ik sjoien haw (Hiemstra's ex. 1c)  
 WH think you who that-cl I seen have  
 'Who do you think (that) I have seen?'

Frisian does not appear to have a wh-indefinite paradigm like the one we saw in German (Rint Sybesma, p.c.). Further work is needed to determine the nature of partial wh-movement in Frisian.

Second, in this analysis, the moved feature after spell-out acts as an XP with respect to verb second. We have considered feature movement as  $X^0$ -movement. Thus, the question that arises is when and how the feature bundle is considered an XP. Under the Bare Phrase Structure theory of Chomsky (1995b), there is in fact no  $X^0$  or XP in the structure. However, if the moved feature bundle acts as an XP regarding verb second, the question is when it projects as an XP. I do not have any data to provide an answer to this question.

Finally, in this analysis, sentences with more than one scope marker was in German are considered to have copies of the feature bundle. Note however that only the original one carries the [+wh] feature. This raises the question of how the feature bundle is spelled out and the nature of copies. I leave this question for future research.

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## Attract and the A-over-A Principle\*

### 1 Introduction

It is proposed by Chomsky (1995), based on a suggestion made by John Frampton, that the operation of movement be reinterpreted as "attraction" "movement" of  $\alpha$  to the neighborhood of K should be thought of as K attracting the relevant features of  $\alpha$  for the latter to enter into a checking relation with K, rather than  $\alpha$  moving to the neighborhood of K to get its relevant features checked off. Chomsky (1995) defines this basic operation of human language computation in the following form, incorporating the Minimal Link Condition of Chomsky and Lasnik 1993 into the definition of the operation itself, to avoid the well-known problem of computational complexity arising with respect to economy considerations (see Chomsky 1995 for a fuller discussion on these matters, as well as expositions of technical concepts of the minimalist program)

#### (1) *Attract*

K attracts F if F is the closest feature that can enter into a checking relation with a sublabel of K (where a sublabel of K is a feature of the zero-level projection of the head H(K) of K)

(adapted from Chomsky 1995: 297)

The purpose of this note is to explore further consequences of Attract for the theory of movement, suggesting, in a preliminary form, what seems to be a promising direction to take. More

\* This is an interim report of on going research focusing on the fundamental ideas that I'm pursuing. A larger work incorporating the content of this article is in preparation. Portions of the material in this paper have been presented at colloquia at UCLA and the University of Washington in 1995 as well as at the symposium 'Locality in Minimalism' held at the National Convention of the English Literary Society of Japan (May 1996). I'm grateful to the audiences of these occasions (particularly Soo-won Kim, Anoop Mahajan, Fritz Newmeyer, Dominique Sportiche and Tim Stowell) for their comments. I would also like to thank the following colleagues for valuable (written) comments: Brian Agbayani, Robert Freidin, Heizo Nakajima, Yuji Takano, Kazue Takeda, and Akira Watanabe. I have not been able to incorporate many of the comments of these people but will do so in the expanded version of this paper.