

Partial Wh-Movement and The Typology of Wh-Questions

JOACHIM SABEL
Universität Frankfurt am Main

1. Introduction

In this paper, I analyze aspects of *wh*-question formation in typologically different languages. I discuss languages such as German, where *wh*-movement (of a single *wh*-phrase) to a scopal Spec CP position applies overtly (i.e., the full *wh*-movement construction), and languages like Duala and Kikuyu, in which a *wh*-element may either be left in situ or moved to the scopal position where the *wh*-phrase is interpreted. In addition, I present an analysis of the so-called partial *wh*-movement construction. Partial *wh*-movement is attested in *wh*-ex situ languages such as German (van Riemsdijk (1983), McDaniel (1989)), as well as in (optional) *wh*-in situ languages such as Kikuyu (Clements (1984)). It will turn out that a comparative analysis of *wh*-in situ and full *wh*-movement languages is an ideal way to test the cross-linguistic adequacy of an account of the partial *wh*-movement phenomenon. Based on the Minimalist Program (Chomsky (1995, ch. 4)), I want to argue for a unitary feature-checking analysis of *wh*-movement in the types of languages mentioned and suggest that the possibility of partial *wh*-movement, full *wh*-movement, and *wh*-in situ can be seen as a consequence of the different feature-strength of two kinds of features: [+focus]- and [+wh]-features.

In section 2.1, I introduce the partial *wh*-movement phenomenon; section 2.2 centers around the question where the *wh*-expletive in the German partial *wh*-movement construction comes from and whether it is replaced at LF; sections 2.3 and 2.4 present data from the *wh*-in situ languages Kikuyu and Duala which differ with respect to whether partial *wh*-movement is possible or not. In section 3, *wh*-movement is analyzed as an instance of focus-movement which applies successive-cyclically. This section contains the analysis of full *wh*-movement, partial *wh*-movement, and *wh*-in situ constructions. Section 4 provides the summary.

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2. Wh-Movement in Wh-in situ and Wh-ex situ Languages

2.1. Some Properties of (Partial) Wh-Movement in German

It is a well-known fact that English and German differ from ‘*wh*-in situ’ languages such as Chinese in which *wh*-phrases are not overtly moved to Spec CP (1). In regular *wh*-questions in English and German, a single *wh*-word must be overtly moved to Spec CP, i.e., to the position in which the *wh*-phrase takes scope. *Wh*-elements in situ give rise to ungrammaticality (2)–(3):¹

- (1) Ta shuo shenme ?
 he say what
 ‘What did he say?’
- (2) a. What_{*i*} did John buy t_{*i*} ?
 b. *John bought what ?
- (3) a. Was_{*i*} hat Hans t_{*i*} gekauft ?
 what has H. bought
 ‘What did Hans buy ?’
 b. *Hans hat was gekauft ?
 H. has what bought

However, German, in contrast to English, allows for a second possibility of forming a *wh*-question, viz., the partial *wh*-movement construction. Partial *wh*-movement in German consists of movement of a *wh*-phrase to an embedded Spec CP of a [–wh] clause and realization of the *wh*-expletive *was* (‘what’), as in (4), in the Spec CP position of a higher clause. (5) shows that partial *wh*-movement is impossible in English (see also Collins (1997, 110)):

- (4) a. [CP₁ Was meinst du [CP₂ wen_{*i*} [IP Peter Hans t_{*i*} vorgestellt
 WH think you_{*nom*} who_{*acc*} P._{*nom*} H._{*dat*} introduced
 hat]]] ?
 has
 ‘Who do you think Peter has introduced to Hans?’

¹In this article, I will only briefly discuss multiple *wh*-questions in which *wh*-in situ is in fact possible in languages such as English and German. It is well known that languages must be divided according to whether or not all *wh*-elements are fronted to clause initial position in the overt syntax. In Bulgarian, Romanian, Polish, and Czech (Rudin (1988)), the so-called multiple *wh*-fronting languages, for example, all *wh*-phrases have to move overtly to a clause-initial position, whereas in languages such as English and German only a single *wh*-word is fronted to a sentence-peripheral position and further *wh*-phrases stay in situ. Besides these two groups there are several languages, such as Irish and Italian, that do not allow for multiple questions at all. (See Richards (1997), Sabel (1998), and Grewendorf & Sabel (1999) for unitary accounts of multiple *wh*-questions in typologically different languages.) A further typological possibility is represented by *wh*-in situ languages such as Chinese in which all *wh*-phrases remain in situ in the overt syntax. However, concerning *wh*-in situ in so-called *wh*-in situ languages, I have argued elsewhere (Sabel (1998)) that this construction in Japanese involves ‘invisible copy movement’ in the overt syntax, whereas *wh*-in situ in languages such as Malay and Chinese (‘real’ *wh*-in situ) has to be derived by assuming that unselective binding of the *wh*-phrase by the [+wh] head is sufficient (see Baker (1970), Heim (1982), Williams (1986), Chomsky (1995, 291), among others).

- b. [CP₁ Was meinst du [CP₂ wem_i [IP Peter t_i die Leute
 WH think you_{nom} who_{dat} P._{nom} the people_{acc}
 vorgestellt hat]]] ?
 introduced has
 ‘To whom do you think Peter has introduced the people?’
- (5) a. *[CP What do you think [CP who_i [IP Mary loves t_i]]] ?
 b. *John thinks [CP who_i [IP Mary loves t_i]] ?

In (4) we find some kind of “long distance linking” between the *wh*-elements in Spec CP₂ and the matrix Spec CP position. The *wh*-phrase in the lowest clause is interpreted in the Spec CP position of the highest clause, i.e., the *wh*-expletive *was* (‘what’) acts as a scope marker since it marks the scopal position of the ‘true’ *wh*-phrase. In other words, the constructions in (4) are similar to the corresponding *wh*-questions in (6), which in contrast to the examples in (4) result from long *wh*-movement. The constructions have the same meaning:²

- (6) a. [CP Wen_i meinst du [CP t'_i daß [IP Peter Hans t_i vorgestellt
 who_{acc} think you_{nom} that P._{nom} H._{dat} introduced
 hat]]] ?
 has
- b. [CP Wem_i meinst du [CP t'_i daß [IP Peter t_i die Leute
 who_{dat} think you_{nom} that P._{nom} the people_{acc}
 vorgestellt hat]]] ?
 introduced has

The *wh*-expletive is often realized as the equivalent of the bare accusative *wh*-phrase (for example *was* (‘what’) in German, see Müller (1997, 254)), although some Slavic languages such as for example Polish use *jak* (‘how’) (Willim (1989, 113ff.)). Furthermore, the *wh*-expletive need not be overtly realized. Albanian,

²Compare the examples in (i) with (4). (i-a) and (i-b) are interpreted as containing two questions. The first clause introduced by *was* (‘what’) asks for the person’s general opinion, and the second asks another independent question. The examples in (i) have to be analyzed as not containing subordinate clauses. On the other hand, in (4) we have a sequence of main and subordinate clause. Consequently, in (4) we get the same question interpretation as in the examples (6). Note that there is also an overt syntactic difference between the examples in (i) and (4). *Was* (‘what’) in the matrix clause forces the embedded finite verb to stay in final position in (4), whereas verb second applies in both corresponding sentences in (i-a) and (i-b).

- (i) a. [Was_i meinst du t_i] ? [Wen_i hat Peter Hans t_i vorgestellt] ?
 what think you_{nom} who_{acc} has P._{nom} H._{dat} introduced
 ‘What do you think? Who has Peter introduced to Hans?’
- b. [Was_i meinst du t_i] ? [Wem_i hat Peter t_i die Leute vorgestellt] ?
 what think you_{nom} who_{dat} has P._{nom} the people_{acc} introduced
 ‘What do you think? To whom has Peter introduced Hans?’

A further argument against analyzing (4) as in (i) concerns the fact that an element occurring in CP₁ may bind, hence c-command an element in CP₂. For example, *Peter* in (ii) is bound by the pronoun *er* (‘he’) and violates Principle C:

- (ii) *[CP₁ Was meint er_i [CP₂ welchen Roman_j Peter_i t_j lesen sollte]] ?
 WH thinks he_{nom} which novel_{acc} P._{nom} read should
 ‘Which novel does Peter think he should read?’

Iraqi Arabic, Kikuyu, and Malay use covert variants of *wh*-expletives (see also Anyadi & Tamrazian (1993), Cole & Hermon (this volume) and section 4 below).

The partial *wh*-movement construction raises the following questions:

- (7) Which constraints is the movement of the (contentful) *wh*-element in the embedded clause subject to?
- (8) Where does the *wh*-expletive come from?
- (9) What kind of parametric property is responsible for the fact that some languages allow for partial *wh*-movement whereas others do not?

Question (7) has two aspects. First we have to ask why partial *wh*-movement does not violate selectional restrictions and then we have to figure out what triggers the movement of the ‘true’ (contentful) *wh*-phrase in the embedded clause.

Speaking of selectional restrictions is purely descriptive. Several attempts have been made in the literature to formulate a theoretical explanation, i.e., to formulate constraints that account for the distribution of *wh*-phrases. One example is the *Wh-Criterion* in Rizzi (1996) (see also Aoun, Hornstein & Sportiche (1981), and Lasnik & Saito (1992), among others). Although the status of these accounts is unclear under the assumptions made in the Minimalist Program – an explanation in this framework would rely on the idea that movement is solely necessary in order to check features (Chomsky (1995)), see section 3.2 – I will first discuss the question of why partial *wh*-movement does not violate the *Wh-Criterion* (Rizzi (1996)). Later, I will in fact adopt the feature-checking analysis.

Before considering partial *wh*-movement in light of the *Wh-Criterion*, let us briefly review how the latter works in German:

- (10) *Wh-Criterion*:
 - a. A *Wh*-Operator must be in a Spec head configuration with an X^0 [+wh].
 - b. An X^0 [+wh] must be in a Spec head configuration with a *Wh*-Operator.

Assuming that X^0 in (10) is C^0 and that both conditions (10-ab) have to be fulfilled, the *Wh-Criterion* allows for an explanation of the distribution of *wh*-phrases, i.e., of the differences in grammaticality in the examples (11)–(13) below. The matrix verb in (11) selects a complement with a [–wh]- C^0 . The *wh*-word in (11-b) is therefore in a Spec head relation with a [–wh]-head, violating condition (10-a). The matrix verb in (12) selects a [+wh]-complement. The ungrammaticality of (12-a) is due to the fact that the [+wh]-head does not stand in a Spec head configuration with a *wh*-phrase. Thus, this example represents a violation of (10-b). On the other hand, both conditions (10-ab) are fulfilled in (12-b). Furthermore, in (13) we find a matrix verb which may select a [–wh]-complement (13-a) as well as a [+wh]-complement (13-b). Again, the *Wh-Criterion* is satisfied in (13-b).

- (11) a. Ich meine [_{CP} daß [_{IP} Peter Hans Maria vorgestellt hat]]
 I think that P._{nom} H._{dat} M._{acc} introduced has

- b. *Ich meine [CP wem_i [IP Peter t_i die Leute vorgestellt hat]]
 I think who_{dat} P._{nom} the people_{acc} introduced has
- (12) a. *Ich fragte mich [CP daß Hans Maria sah]
 I asked REFL that H._{nom} M._{acc} saw
 b. Ich fragte mich [CP wen_i [IP Hans t_i sah]]
 I asked REFL who_{acc} H._{nom} saw
- (13) a. Sie sagte [CP daß Hans Maria sah]
 She said that H._{nom} M._{acc} saw
 b. Sie sagte [CP wen_i [IP Hans t_i sah]]
 She said who_{acc} H._{nom} saw

The examples in (14) show that the *Wh-Criterion* has to be fulfilled in the overt syntax in German:

- (14) a. *Ich sagte [CP [IP Hans wen sah]]
 I said H. who_{acc} saw
 b. *Ich frage mich [CP [IP Hans wen sah]]
 I ask REFL H. who_{acc} saw

Ignoring partial *wh*-movement for the time being, the question is what happens with examples that contain multiple *wh*-phrases. Given that Rizzi (1996) assumes LF *wh*-movement, we have to ask whether *was* ('what') in (15) with the LF-representation (15') violates (10-a). Given the assumption that the *Wh-Criterion* holds before *Spell-out* in German, (15) should indeed be ungrammatical and yet the example is fine. To suggest that the *Wh-Criterion* in languages like German alternatively applies before *Spell-out and LF* would similarly make the wrong predictions since then (15) would again be expected (incorrectly) to be ungrammatical. A third possibility, namely, the claim that the *Wh-Criterion* in German might hold only at LF, would also be inadequate (see (14)).

- (15) Ich frage mich [CP wer_i [IP t_i was gesehen hat]]
 I ask REFL who_{nom} what_{acc} seen has
- (15') Ich frage mich [CP was_j wer_i [IP t_i t_j gesehen hat]]
 I ask REFL what_{acc} who_{nom} seen has

Lasnik & Saito (1992, 11) assume that the following filters (16-ab) hold before *Spell-out* only in languages with overt *wh*-movement, and at LF universally:

- (16) a. A [+wh] Comp must have a [+wh] head.
 b. A [-wh] Comp must not have a [+wh] head.
 c. All *wh*-elements must be in a [+wh] Comp at LF.

This formulation, in contrast to the *Wh-Criterion* (10), does not have any difficulties in accounting for multiple *wh*-questions in languages such as German and English (see also Rizzi (1996) for a potential solution according to which a *wh*-in situ does not count as *wh*-operator. However, this analysis is unable to capture the typological differences mentioned in fn.1). (16-a) and (10-a) raise

problems with respect to partial *wh*-movement constructions. Consider again the examples (4) and (6), restated here as (17)–(18):

- (17) a. [_{CP₁} Was meinst du [_{CP₂} wen_i [_{IP} Peter Hans t_i vorgestellt
WH think you who_{acc} P._{nom} H._{dat} introduced
hat]]] ?
has
- b. [_{CP₁} Was meinst du [_{CP₂} wem_i [_{IP} Peter t_i die Leute
WH think you who_{dat} P._{nom} the people_{acc}
vorgestellt hat]]] ?
introduced has
- (18) a. [_{CP} Wen_i meinst du [_{CP} t'_i daß [_{IP} Peter_{nom} Hans t_i vorgestellt
who_{acc} think you that P._{nom} H._{dat} introduced
hat]]] ?
has
- b. [_{CP} Wem_i meinst du [_{CP} t'_i daß [_{IP} Peter_{nom} t_i die Leute
who_{dat} think you that P._{nom} the people_{acc}
vorgestellt hat]]] ?
introduced has

(17), in contrast to (18), violates (16-b) (and (10-a)) since the *wh*-phrases in CP₂ are not in a Spec head relation with a [+wh]-C⁰. Recall that the matrix verb *meinen* ('think') only selects for a [-wh]-complement (11). A solution to this problem would be to assume that the partial *wh*-movement construction (17) establishes a *wh*-chain (in the sense of McDaniel (1989)). Assuming that a *wh*-expletive counts as a *wh*-operator (McDaniel (1989, 580)), the idea being that the [+wh]-feature is transferred to the head of the *wh*-chain, (17) fulfills the *Wh-Criterion* if it is sufficient that the head of the *wh*-chain (*Was*, *wem*, *t*) fulfills the *Wh-Criterion* or (16) before *Spell-out*, as assumed in Rizzi (1992, 370) (see also McDaniel (1989)). Then, the true *wh*-phrase in (17) does not violate the *Wh-Criterion* since (10) (and (16)) apply to a *wh*-chain, in which *wem* is a [-wh]-element like an intermediate trace (see Lasnik & Saito (1992)).

Although the problems with (10) and (16) to account for partial *wh*-movement can be circumvented by making use of the notion of *wh*-chains, I will not propose an analysis in terms of these filters. Analyses in terms of the filters (10) and (16) rely on LF *wh*-movement, and as already mentioned, I do not assume LF *wh*-movement. More generally, cross-linguistic variation with respect to *wh*-in situ in embedded questions, as well as the properties of multiple *wh*-questions in different languages and the phenomenon of *wh*-scrambling provide independent evidence for the adequacy of a feature-checking analysis, since this analysis allows for a uniform account of these phenomena with partial *wh*-movement (see Sabel (1998) for details of this analysis). It is improbable that any parameterized version of (10) or (16) would be able to explain the different *wh*-movement phenomena just mentioned. In section 3, I will present an analysis in terms of feature-checking. As will be shown, there are reasons to assume that *wh*-movement is triggered

not only by [+wh]-features but also by [+focus]-features; this fact provides the basis for an account of partial *wh*-movement, full *wh*-movement, and *wh*-in situ constructions.

Let us now turn to the second aspect of question (7). Why does the true *wh*-phrase move to Spec CP in partial *wh*-movement constructions? There are several potential answers to this question. One possibility would be to assume that this is necessary in order to create a legitimate *wh*-chain before *Spell-out*. Another explanation would rely not on the notion of *wh*-chains, but on the idea that feature-checking is responsible for (overt and covert) movement (Chomsky (1995)). As for the latter case, we would have to state that the ‘true’ *wh*-phrase has to check a [-wh]-feature in C⁰ of Spec CP. I will discuss this possibility in section 3, arguing that checking of a [+focus]-feature is involved (see also fn.18).

Before I turn to question (8), i.e., the source of the *wh*-expletive, I would like to add that not only the ‘true’ *wh*-phrase in partial *wh*-movement constructions but also the *wh*-expletive, such as the one in CP₂ in (19-a), has to check [-wh]-features (in (19-a) only the *wh*-expletive in CP₁ functions as a *wh*-scope marker):

- (19) a. [CP₁ Was meinst du [CP₂ was Peter glaubt [CP₃ wen Maria
 WH think you WH P. believes who_{acc} M.
 t_{wen} liebt]]] ?
 loves
- b. % [CP₁ Was meinst du [CP₂ (t_{was}) daß Peter glaubt [CP₃ wen
 WH think you that P. believes who_{acc}
 Maria t_{wen} liebt]]] ?
 M. loves
- c. % [CP₁ Was meinst du [CP₂ t_{was} glaubt Peter [CP₃ wen Maria
 WH think you believes P. who_{acc} M.
 t_{wen} liebt]]] ?
 loves

Furthermore, as can be seen from (19-a) vs. (19-bc), for most German speakers, scope marking across more than one sentence boundary is only possible if the highest *wh*-expletive and the true *wh*-phrase are connected via intermediate Spec CP positions which contain a *wh*-expletive.

I assume that constructions with multiple *was* as in (19-a) result from overt copy movement which is independently attested in German, as can be seen from multiple occurrences of the non-*wh*-expletive *wen* in (20-a). ((20-a) is synonymous with (20-b)):

- (20) a. [CP₁ Wen meinst du [CP₂ wen Peter glaubt [CP₃ wen
 who_{acc} think you_{nom} who_{acc} P._{nom} believes who_{acc}
 Maria t_{wen} liebt]]] ?
 M. loves

- b. [_{CP₁} Wen_i meinst du [_{CP₂} t'_i glaubt Peter [_{CP₃} t'_i liebt
 who_{acc} think you_{nom} believes P._{nom} loves
 Maria t_i]]] ?
 M._{nom}

There is independent evidence for the fact that the similar copy movement operation is involved in (19-a), giving rise to multiple occurrences of *was*. Note that for those speakers of German for whom the absence of an intermediate *was* in (19-bc) leads to ungrammaticality, the same ungrammaticality results if not all copies in (20-a) are spelled out, as can be seen from (21-ab). On the other hand, idiolects which do not force the *Spell-out* of any of the copies in (20) also tolerate (19-bc). Hence partial *wh*-movement behaves exactly like copy movement in this respect (compare (21-a) with (19-c) and (21-b) with (19-b)):

- (21) a. % [_{CP₁} Wen meinst du [_{CP₂} t_{wen} glaubt Peter [_{CP₃} wen
 who_{acc} think you_{nom} believes P._{nom} who_{acc}
 Maria t_{wen} liebt]]] ?
 M. loves
- b. % [_{CP₁} Wen meinst du [_{CP₂} t_{wen} daß Peter glaubt [_{CP₃}
 who_{acc} think you_{nom} that P._{nom} believes
 wen Maria t_{wen} liebt]]] ?
 who_{acc} M. loves

My analysis rests on the assumption that only 'one' *wh*-expletive is related to the 'true' *wh*-phrase. In that respect, *wh*-expletives are similar to expletives in A-chains.

2.2. The Source of the Wh-Expletive

Let us now turn to question (8), i.e., where does the scope marker come from? Van Riemsdijk (1983), McDaniel (1989), and Wahba (1991) assume that the scope marker is a base-generated *wh*-expletive in Spec CP, and that it is linked with the moved 'true' *wh*-phrase (see also Mahajan (1990) for a similar analysis for Hindi). On the other hand, Dayal (1994), among others, assumes that *was* is the *wh*-equivalent of *es* ('it'), which is base-generated in object position and moved to Spec CP. The linking between the partially moved *wh*-phrase and the scope marker in the [+wh]-C⁰ is either 'direct' or 'indirect.' The first, i.e., the direct linking (or direct dependency) approach (van Riemsdijk (1983), McDaniel (1989), Brody (1995b), Müller (1997)), rests on the assumption that the true *wh*-phrase is associated with the scope marker either by moving the true *wh*-phrase into the expletive at LF or by building a chain before *Spell-out* between the scope marker and the true *wh*-phrase. The indirect dependency approach rests on the assumption that the scope marker is associated with the complement CP (cf. Hiemstra (1986), Srivastav (1990), Haider (1993, 98), Dayal (1994), Horvath (1997)). I will assume here the direct dependency approach. However, recall that I do not assume LF *wh*-movement. Consequently, I will adopt the assumption

that in German a *wh*-chain is constructed in the overt syntax between the scope marker and the ‘true’ *wh*-phrase and that no LF movement of the true *wh*-phrase to the scope marker takes place (see the discussion below).³

One problem with the (*wh*-expletive) base-generation analysis seems to arise from parasitic gap constructions. As is well known, a parasitic gap is licensed by a variable that does not c-command it; see (22-a) vs. (22-b). Furthermore, parasitic gaps are only licensed by overt A'-movement, i.e., the A'-moved element has to c-command the parasitic gap as well as its trace in the overt syntax; cf. (22-a) vs. (22-c):

- (22) a. Which book_{*i*} did you return t_{*i*} [without reading e_{*i*}] ?
 b. *Which book_{*i*} t_{*i*} disappeared [before you could read e_{*i*}] ?
 c. *Who_{*i*} t_{*i*} filed what [after reading e_{*i*}] ?

The fact that parasitic gaps are licensed in partial *wh*-movement constructions seems to suggest that movement of the *wh*-expletive from the position indicated in (23) is involved:

- (23) a. Was hat [ohne e offen auszusprechen] eigentlich Hans (t_{*was*})
 WH has without frankly to-express actually H._{*nom*}
 gemeint [wen_{*i*} Maria t_{*i*} liebt] ?
 thought who_{*acc*} M._{*nom*} loves
 b. Was hat zehn Stunden vor dem Finale [ohne e später bei den
 WH has ten hours before the final without later at the
 Interviews zugeben] der Trainer (t_{*was*}) gesagt [wen_{*i*} er t_{*i*} für
 interviews to-admit the coach_{*nom*} said who_{*acc*} he for
 das Spiel nominieren wird] ?
 the game nominate will

On the other hand, an alternative explanation for the grammaticality of (23) could rely on the idea of *wh*-chains. In (23), we find a *wh*-chain (*was*, *wen*, *t*) before *Spell-out*. Given that parasitic gaps have to be licensed in the overt syntax, the *wh*-chain in (23) licenses it. Thus, the data in (23) are compatible with the base-generation and with the movement approach.

However, it must be noted that the parasitic gap examples do not provide any evidence for the questions at hand. As is well known (cf. Kayne (1984, ch. 8); Chomsky (1986)), real parasitic gaps behave like traces of movement, i.e.,

³In Sabel (1998; 1999), I propose an answer to question (8) that relies on the idea that a unified account of expletive-associate relations should be given. The main idea is that the expletive-associate relation is derived by movement of the so-called expletive out of the associate. The expletive is analyzed as a feature of the associate. For example, my analysis of A-CHAINS is based on the idea that the expletive *there* is a D-element which, following Chomsky (1995), solely checks a D-feature. Hence, the expletive-associate relation in *There is a man in the garden* is derived from the DP [_{DP} there [_{NP} a man]] from which the D-part *there* is extracted. Partial *wh*-movement constructions such as (17-a) or (19-a) are then derived from the DP-structure [_{DP} was [_{NP} wen]] from which the D-part *was* (‘what’) is extracted (see also Hiemstra (1986), Cheng (this volume)).

they exhibit island-sensitivity. This fact motivated the empty-operator analysis in Chomsky (1986), which rests on the assumption that a parasitic gap is licensed if its associated empty operator moves to a position in which it is not separated from the ‘real’ gap by a barrier. Now consider the following examples:

- (24) a. [Was hat [[ohne PRO [NP den Versuch t_{CP}] zu machen] [CP
WH has without the attempt to make
PRO in einem Gespräch e aufzuklären]] eigentlich Peter geglaubt
in a conversation to-clear-up actually P. believed
[CP warum_i Maria ihn t_i verlassen hat]] ?
why M. him left has
- b. [Was hat [[ohne PRO mit anderen zu sprechen] [um PRO
WH has without with others to speak in-order
e nicht öffentlich bekannt zu machen]] eigentlich der Minister
not publically known to make actually the minister
geglaubt [CP wen_i die Polizei t_i bespitzelt hat]] ?
believed who the police spied-upon has

The gap e in (24-a) is located in a complex NP (before extraposition takes place) and in an adjunct clause in (24-b). But in these environments, ‘real’ parasitic gaps are not licensed. We would expect (24) to be ungrammatical if we were dealing with ‘real’ parasitic gaps. On the other hand, Postal (1994, 86) has noted that we have to distinguish between parasitic gaps and *pseudo* parasitic gaps, the latter not being island-sensitive like the empty categories in (23)–(24). To sum up, ‘parasitic gaps’ in German do not shed any light on the analysis of the *wh*-expletive *was* (‘what’).

If the *wh*-element *was* (‘what’) is base-generated as an argument that can only appear in a complement position (associated with a CP), as assumed in Dayal (1994), we can automatically explain the fact that it does not appear with subjects of small clauses (25-a), (26-a) or subject clauses (25-b), (26-b) and that it does not co-occur with in situ *wh*-elements in the matrix clause, (25-c) vs. (26-c):

- (25) a. Er findet [[_{SC} es überraschend] [daß Maria Hans noch liebt]]
he considers it surprising that M._{nom} H._{acc} still loves
- b. weil es ihn überrascht [daß Maria Hans noch liebt]
since it him_{acc} surprises that M._{nom} H._{acc} still loves
- c. Was_i hat sie wem t_i gesagt ?
what_{acc} has she_{nom} who_{dat} said
- (26) a. *Was_j findet er [[_{SC} (t_j) überraschend] [wen_i Maria t_i
WH considers he_{nom} surprising who_{acc} M._{nom}
noch liebt]] ?
still loves
- b. *Was_j überrascht (t_j) ihn [wen_i Maria t_i noch liebt] ?
WH surprises him_{acc} who_{acc} M._{nom} still loves

- c. *Was ist er wem begegnet ?
 WH is he_{nom} who_{dat} met

We furthermore automatically get an explanation for the fact that in languages such as Hungarian the *wh*-expletive bears the Case of its associated CP (see also Simpson (1999)), as can be seen in the following examples (examples (27-ab) are from Horvath (1997)):

- (27) a. Mit mondtal, hogy mire szamitanak gyerekek ?
 WH_{acc} said_{Indef,2sg} that what_{Subl} count_{Indef,3pl} the-kids_{nom}
 ‘What did you say that the kids expected?’
 b. Mi zavarja Marit, hogy hogy beszélnek a gyerekek ?
 WH_{nom} bother_{Def,3sg} M. that how speak_{Indef,3pl} the kids_{nom}
 ‘How does it bother Mary that the kids speak?’

In (27-a), the expletive bears accusative, whereas in (27-b) it is marked for nominative Case.

On the other hand, the fact that partial *wh*-movement is possible in subject clauses in Hungarian (27-b) raises the question of why its counterpart in German is impossible (26-b). At this point it must be noted that the indirect linking approach does not offer an answer to this question.⁴

Furthermore, only if we follow the direct dependency approach and assume that *was* (‘what’) is an element associated with the true *wh*-phrase and not with the complement CP, do we get an explanation for the fact that sentences like (28) are grammatical. In (28), CP₃ containing the partially *wh*-moved phrase is not an argument of the matrix verb *meinen* (‘think’). It is a CP that is moved from the complement-position of the verb *sagen* (‘say’) to the position adjacent to the *wh*-expletive. The alternative approach would predict that *was* (‘what’) being base-generated as an object of the verb *sagen* (‘say’) has to cross a *wh*-island:⁵

- (28) a. [CP₁ Was meinst du [CP₂ [CP₃ wer siegen wird] habe Hans t_{CP₃}
 WH think you who win will has H.
 gesagt]] ?
 said
 ‘Who do you think that Hans has said will win?’

⁴Assuming a direct dependency approach, the fact that the *wh*-expletives bear different Cases in (27) can be explained if Case assignment into an intermediate (Spec) CP is assumed to proceed as in examples such as (i) (see Stowell (1981, 417f.), Kayne (1984, 5)):

(i) the man whom_i I believe [CP t'_i [IP t_i has left]]

A similar case is represented by lexical subjects of infinitival complements of *believe*-type verbs in French and Italian (see Rizzi (1982) and Kayne (1984) for discussion).

See Sabel (1996) for an analysis of the fact that a *wh*-expletive in Hungarian, in contrast to German, acts as a bridge for a ‘true’ *wh*-phrase located in an island.

⁵Sentences like those in (28) and (29) are judged to be grammatical by most speakers I have consulted. However, these sentences are perceptually complex, since their structural analysis is temporarily ambiguous. CP₃ is analyzed as being a complement of the matrix verb until this sentence is disambiguated by the verb *sagen* (‘say’).

- b. [_{CP₁} Was glaubst du [_{CP₂} [_{CP₃} wer intelligent sei] habe Hans
 WH believe you who intelligent is_{Subj} has H.
 t_{CP₃} gesagt]] ?
 said
 ‘Who do you believe that Hans has said is intelligent?’
- (29) a. [_{CP₁} Wer_i meinst du [_{CP₂} [_{CP₃} t'_i wird [_{IP} t_i siegen]] habe Hans
 who think you will win has H.
 t_{CP₃} gesagt]] ?
 said
 ‘Who do you think that Hans has said will win?’
- b. [_{CP₁} Wer_i glaubst du [_{CP₂} [_{CP₃} t'_i sei [_{IP} t_i intelligent]] habe
 who believe you is_{Subj} intelligent has
 Hans t_{CP₃} gesagt]] ?
 H. said
 ‘Who do you believe that Hans has said is intelligent?’

For the moment I will assume that *was* is a *wh*-expletive and abstract from the question of whether it is an expletive that is inserted in Spec CP, or whether it is base-generated in object position and moved to Spec CP from there, or if it is a sub-extracted feature of the associate. However, I will adopt the assumption that in German a *wh*-chain is constructed before *Spell-out* between the *wh*-expletive and the ‘true’ *wh*-phrase and that no LF movement of the true *wh*-phrase to the *wh*-expletive takes place. I will give two reasons for this view.

One argument concerns anti-crossover effects. In the following sentences where the matrix subject pronoun *c*-commands the name within the most deeply embedded CP, there is a violation of Principle C of the Binding Theory (Chomsky (1981)):

- (30) a. * [_{CP₁} Ich weiß nicht [_{CP₂} was er_i meint [_{CP₃} welche Wahl_j der
 I know not WH he thinks which election the
 Präsident_i t_j gewinnen wird]]]
 president win will
- b. * [_{CP₁} Ich weiß nicht [_{CP₂} was er_i glaubt [_{CP₃} in wieviel Sätzen_j
 I know not WH he believes in how-many sets
 Boris_i im Finale t_j siegen wird]]]
 B. in-the final win will
- c. * [_{CP₁} Er_i fragt sich [_{CP₂} was die Leute glauben [_{CP₃} in wieviel
 he asks REFL WH the people believe in how-many
 Sätzen_j Boris_i im Finale t_j siegen wird]]]
 sets B. in-the final win will

If we topicalize the embedded clause across the *wh*-island, we observe a sharp contrast to (30). The sentences in (31) only involve a weak *wh*-island violation. If the *wh*-expletive in CP₂ must be overwritten at LF by the true *wh*-phrase, we would expect CP₃ to be necessarily reconstructed into its base-position. But

then, at LF (31) should represent a Principle C violation like (30).⁶

- (31) a. ?[_{CP₁} [_{CP₃} Welche Wahl_j der Präsident_i t_j gewinnen wird] weiß
 [which election the president win will] know
 ich nicht [_{CP₂} was er_i t_{CP₃} meint]
 I not WH he thinks
- b. ?[_{CP₁} [_{CP₃} In wieviel Sätzen_j Boris_i im Finale t_j siegen wird]
 [in how-many sets B. in-the final win will]
 weiß ich nicht [_{CP₂} was er_i t_{CP₃} glaubt]
 know I not WH he believes
- c. ?[_{CP₁} [_{CP₃} In wieviel Sätzen_j Boris_i im Finale t_j siegen wird]
 [in how-many sets B. in-the final win will]
 fragt er_i sich [_{CP₂} was die Leute t_{CP₃} glauben]
 asks he REFL WH the people believe

If, on the other hand, we assume that it is sufficient that a well-formed *wh*-chain is constructed during one step of the derivation before *Spell-out*, then reconstruction is not necessary in (31). The *wh*-chain analysis correctly predicts the grammaticality of (31).

Furthermore, as already mentioned, in light of the Minimalist Program, *wh*-movement of the associate *wh*-phrase at LF should be impossible since it is not forced. This follows from the distinction between [\pm strong] and [\pm interpretable] formal features. Recall that [$-$ interpretable] features must be checked and eliminated by overt movement if they are [$+$ strong], and by covert movement if they are [$-$ strong]. On the other hand, [$+$ interpretable] features must only be checked overtly, i.e., if they are [$+$ strong]. If they are [$-$ strong] like the [$+$ wh]-feature of *wh*-phrases they need not be checked (see section 3.3 for more details of this analysis). To sum up, there is neither empirical nor theory-internal evidence for LF-replacement of the *wh*-expletive.⁷

Now consider again question (9):

- (9) What kind of parametric property is responsible for the fact that some languages allow for partial *wh*-movement whereas others do not?

How can we explain that languages such as English in contrast to German do not

⁶Note that example (31-c) is also problematic for the indirect dependency approach. If CP₃ has to occupy a position adjoined to CP₂ at LF, (31-c) should represent a violation of Principle C.

⁷A further diagnostic, commonly used to determine whether LF *wh*-movement applies, relates to the phenomenon of weak crossover. According to Lasnik & Stowell (1991), weak crossover effects occur if there is a configuration in which an element A'-binds both a trace and a pronoun that is contained in an argument XP that c-commands the trace. Consider the following examples from German:

- (i) *[_{CP} Wen_i glaubt [_{IP} seine_i Mutter [_{CP} t'_i habe [_{IP} Maria t_i geliebt]]]] ?
 who_{acc} believes his mother_{nom} has M. loved
 'Who does his mother believe that Mary loved?'
- (ii) *[_{CP} Was glaubt [_{IP} seine_i Mutter [_{CP} wen_i [_{IP} Maria t_i geliebt habe]]]] ?
 WH believes his mother_{nom} who M. loved has
 'Who does his mother believe that Mary loved?'

allow for partial *wh*-movement? In section 3, I will argue that the answer to this question lies in the parametric properties of the features that force *wh*-movement: the strength of [+focus]- and [+wh]-features. In other words, the idea that *wh*-movement is triggered by the need to check [+focus]-features is an integral part of answering question (9).

Before I turn to this analysis, the next two sections present some background on *wh*-movement facts in the two African languages Kikuyu and Duala. It is useful to look at these languages since, contrary to English and German, Duala and Kikuyu are both *wh*-in situ languages, which also exhibit *wh*-ex situ. However, a similar situation as with the *wh*-ex situ languages English and German arises here, too. Although similar with respect to being *wh*-in situ languages, only one of the two languages, Kikuyu, allows for partial *wh*-movement. In addition, Kikuyu provides evidence that *wh*-movement is triggered by [+focus]-features.

2.3. Some Properties of Wh-Movement in Kikuyu

Kikuyu is an African *wh*-in situ language with SVO order which is spoken in Kenya. The following section is mainly based on the work by Clements on Kikuyu (Clements & Ford (1979), Clements et al. (1983), Clements (1984); see also Zaenen (1983) and Bergvall (1983; 1987) for discussion). Normally in Kikuyu, *wh*-phrases stay in their base-position in the overt syntax (Clements (1984)):

- (32) Kama.ú a-ón-¹íré o ?
 Kamau SP-see-T who (SP=Subject prefix; T=Tense/Aspect affix)
 'Who did Kamau see?'

The language has a very complex tonal system. One of the phenomena that interacts with *wh*-extraction is downstep (see Clements et al. (1983), Clements (1984) for details). Consider (33) (Clements (1984)):

- (33) a. Kariokĩ á-¹tém-íre mo-tě¹
 K. SP-cut-T CP-tree (CP=Nominal class prefix)
 'Kariuki cut a tree.'
 b. Nóo_i t_i o-tém-íré mo-te ?
 FP-who PP-cut-T CP-tree (FP=Focus particle; PP=pronominal prefix)
 'Who cut a tree?'

In (33-a), we have a simple affirmative main clause. The verb is formed by prefixing the right subject particle and by suffixing a tense/aspect affix. Furthermore, a verbal downstep-morpheme (represented by the exclamation mark) is suffixed to the verb (in most tenses) and shifts over to the end of the first major constituent following the verb. In (33-a) it appears at the end of the complement

In (i), movement of the *wh*-phrase proceeds to an A'- or operator-position in front of the subject containing the pronoun, thus resulting in the weak crossover effect. Given this patterning, (ii) seems to suggest that LF *wh*-movement of the 'true' *wh*-phrase results in a configuration in which it ends up in a position from where it A'-binds the pronoun. However, assuming that the *wh*-scope marker and the 'true' *wh*-phrase are co-indexed, the *wh*-chain approach is also able to explain examples such as (ii).

‘tree.’ In (33-b), as a consequence of *wh*-extraction, we first find a new tonal form of the verb, which does not have the downstep morpheme. In Kikuyu, the downstep morpheme disappears in all constructions involving overt *wh*-movement. Secondly, the third person singular subject prefix *a* has been replaced by *o*. (For independent reasons, the subject prefix *a* is replaced by the prefix *o* after a subject trace.) The *wh*-in situ question (32) does not exhibit these properties. Hence, as argued by Clements, non-occurrence of a downstep morpheme goes hand in hand with *wh*-movement. Furthermore, in contrast to (33-b), nothing is prefixed to the question word in (32).⁸

There is only one possible position for moved *wh*-phrases at the left periphery of the sentence and only one *wh*-word may be overtly fronted in a clause, as is shown in (34). Hence one *wh*-word has to stay in situ, as in (34-b) (Clements (1984)):⁹

- (34) a. *Nóo nóo o-ɔn-íré ?
 FP-who FP-who PP-see-T
 b. Nóo o-ɔn-íré o ?
 FP-who PP-see-T who
 ‘Who saw who?’

In addition, we have long *wh*-movement in Kikuyu, as can be seen in (35) and (36-a) (Clements (1984)):

- (35) Nóo_i ó-ɣw-eciíri-a Ngoɣe a-úɣ-írɛ áte Kama.ú a-ɔn-¹írɛ t_i ?
 FP-who SP-T-think-T N. SP-say-T that K. SP-see-T
 ‘Who do you think Ngugi said that Kamau saw?’
- (36) a. Né-kó_i Ngóɣe a-úɣ-írɛ áte Kama.ú ne-a-ɔn-¹í¹ré Kaanáke¹ t_i ?
 FP-where N. SP-say-T that K. FP-SP-see-T K.
 ‘Where did Ngugi say (that) Kamau saw Kanake?’

⁸The deletion of the downstep in Kikuyu is also known as ‘*wh*-agreement’ in the literature. *Wh*-morphology is also found as ‘relative aspect/tense’ marking on verbs in Hausa (Tuller (1986), Haik (1990)) and as irrealis mood marking on verbs in Palauan (Georgopoulos (1991)). These are all cases of *wh*-agreement in the I-system. For discussion of *wh*-agreement in the C-system, see Rizzi (1990, sect. 2.5), Collins (1993), Chung (1994), Nakamura (1995) and sect. 3.3, fn.21.

⁹Bergvall (1987) discusses the possibility that rightward occurring *wh*-phrases in Kikuyu may have undergone *wh*-movement to a rightward landing position. That this position has properties different from Spec CP can be seen from the fact that rightward unbounded movement is impossible in Kikuyu, in contrast to leftward unbounded movement, which is commonly assumed to proceed via Spec CP. In addition, the clause-final positioning of *wh*-elements in Kikuyu is highly constrained in several other respects suggesting that in fact *wh*-movement in Kikuyu is always into a leftward specifier position. Consequently, the occurrence of *wh*-phrases at the right periphery of the sentence has to be explained in a different way. Tuller (1992), for example, in her discussion of Chadic languages (such as Kanakuru, Tangale, Ngizim) identifies this sentence final position for *wh*-elements with a focus-position (for a similar suggestion concerning Italian see also Belletti & Shlonsky (1995) – and in addition, Neidle et al. (1997) propose rightward *wh*-movement for ASL). This however, as noted in Horvath (1995), would imply that languages such as Kikuyu have at least two derived (structural) focus positions, which raises serious problems (see Horvath (1995) and section 3.1 for further discussion).

- b. Ngoγe a-úγ-írɛ́ ate Kama.ú ne-a-ón-¹írɛ́ Kaanáǰé ¹kó ?
 N. SP-say- that K. FP-SP-see-T K. where
 ‘Where did Ngugi say (that) Kamau saw Kanake?’

(36-b) illustrates that in addition to showing up in matrix sentences, *wh*-words in Kikuyu may also be in situ in embedded sentences.

Wh-movement in Kikuyu obeys island constraints. This is demonstrated in (37-a) with object extraction out of a relative clause. *Wh*-islands are attested as well (37-b) (Clements (1984)):

- (37) a. *Nóo_i Káma.ú a-ón-¹írɛ́ mó-ndo o-reǎ ó-ríng-¹írɛ́ t_i ?
 who K. SP-see-T CP-person PP-DEM PP-hit
 (DEM=demonstrative modifier)
 ‘Who did Kamau see the person (that) hit?’
 b. *Nóo_i Ngoγe a-éciri-riɛ́ híhi nóo o-ɔn-¹írɛ́ t_i ?
 SP-wonder-T PP-see-T
 ‘Who did Ngugi wonder who saw?’

The ungrammatical sentences in (37) can be improved by using resumptive pronouns (Clements (1984)):

- (38) a. Nóo Káma.ú a-ón-¹írɛ́ mó-ndo o-reǎ ó-mó-ring-¹írɛ́ ?
 FP-who K. SP-see-T PP-person PP-DEM PP-OP-hit
 (OP=object prefix)
 ‘Who did Kamau see the person (that) hit?’
 b. Nóo Ngoγe a-éciri-riɛ́ híhi nóo o-mo-ɔn-¹írɛ́ ?
 FP-who N. SP-wonder-T FP-who PP-OP-see-T
 ‘Who did Ngugi wonder who saw?’

Interestingly, besides *wh*-in situ and movement to a scope position, Kikuyu allows for a third type of *wh*-construction, i.e., Kikuyu allows for partial *wh*-movement (39-bc). The following sentences all have the same meaning:

- (39) a. [CP₁ Nóo_i ó-γw-eciiri-a [CP₂ Ngoγe a-úγ-írɛ́ [CP₃ áte t_i o-ɔn-írɛ́
 FP-who SP-T-think-T N. SP-say-T that PP-see-T
 Kaanáǰé]]] ?
 K.
 ‘Who do you think Ngugi said saw Kanake?’
 b. [CP₁ Ó-γw-¹éciiri-á [CP₂ nóo_i Ngoγe a-úγ-írɛ́ [CP₃ áte t_i
 FP-who
 o-ɔn-írɛ́ Kaanáǰé]]] ?
 c. [CP₁ Ó-γw-¹éciiri-á [CP₂ Ngoγe a-úγ-írɛ́ [CP₃ áte nóo_i t_i o-ɔn-írɛ́
 that FP-who
 Kaanáǰé]]] ?

If we now look at the tonal structure of the main verbs in CP₁ and CP₂, we see the “special” tonal form, the one associated with *wh*-movement: the deleted downstep in (39-a) and the normal tonal form in (39-b) and (39-c). We find the special form of the verb ‘say’ in CP₂ with high-tone influence on the following complementizer

ate ('that') in (39-a) and (39-b), and the normal form with no high-tone influence on *ate* ('that') in (39-c). This shows that main verbs have special forms if and only if movement into or through the clause in which these verbs are located applies. Clements (1984) argues that the downstep is not actually deleted but fails to be inserted.

One question that arises with respect to (39) is the following: why does movement apply in (39) if we can get the same interpretation with *wh*-in situ? If movement in (39) is optional, it should violate *Last Resort* (Chomsky (1995)). Later in section 3, I will argue that in fact, movement in (39) is not optional and that it applies for feature-checking. Furthermore, why is partial *wh*-movement possible in Kikuyu as in German? Before I try to answer this question it is interesting to look at the properties of *wh*-movement in Duala, another African language.

2.4. Some Properties of Wh-Movement in Duala

Duala is a Bantu language spoken in Cameroon. It basically has SVO order and is, like Kikuyu, a *wh*-in situ and *wh*-ex situ language. The discussion in this section is based on work on Duala that has been done by Epée (1975; 1976a; 1976b) and Biloa (1993).

That Duala is a *wh*-in situ language can be seen from (40)–(41) below. In the (b)-sentences, where overt *wh*-movement applies, *no* is obligatory. On the other hand, as can be seen from the (a)-examples, if the *wh*-phrase is in situ, the particle cannot be present. Hence, the question word is moved only if the marker *no* occurs. Note that the subject is generally associated with a preverbal pronoun (SP), indicating class agreement:

- (40) a. Kuo a po (**no*) njika ponda ?
 K. he come PRCL *wh*-time
 b. Njika ponda_{*i*} Kuo a po *(*no*) t_{*i*} ?
 wh-time K. SP come PRCL
 'At what time will Kuo arrive?'
- (41) a. O bodi (**no*) nja moni ?
 you give PRCL who money
 b. Nja_{*i*} o bodi *(*no*) t_{*i*} moni ?
 who you give PRCL money
 'Who did you give the money to?'

Duala resembles Kikuyu because morphology on the verb occurs with *wh*-movement. I will return to the idea that *no* and the verb form one complex head at some stage of the derivation. Let us assume for the moment that *no* is base-generated in Infl, where it builds a complex head with the verb.

The examples (42-ab) vs. (43-ab) demonstrate that, as in Kikuyu, only one questioned constituent may be preposed (compare (34)):

- (42) a. *Nje neni Kuo a bodi *no* ?
 what how K. he do
 ‘What how did Kuo?’
 b. *Nja njika ponda mama a-alane *no* o don ?
 who *wh*-time mother she-take to market
 ‘Who when did mother take to the market?’
- (43) a. Neni Kuo a bodi *no* nje ?
 how K. he do what
 b. Nja mama a-alane *no* o don njika ponda ?
 who mother she-take to market *wh*-time

This shows that overt *wh*-movement goes to a Spec position in Kikuyu and Duala. If we had *wh*-scrambling, as in languages such as Japanese, we would expect that more than one *wh*-element could be fronted.¹⁰

Furthermore, Duala, like Kikuyu, has long *wh*-movement of subjects, objects, and adjuncts. (44-bc) show a case of long subject extraction. In cases of long *wh*-movement, the particle *no* shows up after the verb in the sentence in which the moved phrase ends up. This also holds for object (44-d) and adjunct extraction (45).

- (44) a. Wa pula na nja a ya mba ?
 you want that who he come me
 ‘Who do you want to come, me?’
 b. [Nja_i wa pula *no* [na t_i a ye mba]] ?
 who you want that he come me
 c. *[Nja_i wa pula [na t_i a ye mba]] ?
 d. moto [CP₁ nyena_i na mongele *no* [CP₂ na o kwadi [CP₃ na o
 man who I think that you say that you
 wen t_i]]]
 see
 ‘the man who I think that you said that you saw’
- (45) a. O ta o kwalane mba na o mende timba njika buna ?
 you AUX you tell_{Past} me that you AUX-FUT return *wh*-day
 ‘When did you tell me that you would return?’
 b. [Njika buna_i o ta *no* o-kwalane mba [na o-mende
wh-day you AUX you-tell_{Past} me that you_{Aux-Fut}
 timba t_i]] ?
 return
 c. *[Njika buna_i o ta o-kwalane *no* mba [na o-mende timba t_i]] ?
 d. *[Njika buna_i o ta o-kwalane mba [na o-mende *no* timba t_i]] ?

As can be seen from (45-b) vs. (45-c), *no* occurs after the first verbal element in the sentence. It occurs immediately after the auxiliary in (45-b) and may

¹⁰The properties of *wh*-scrambling are discussed in Sabel (1998, ch. 5) and Grewendorf & Sabel (1999).

not remain after the participle. It seems that *no* is base-generated in Infl and that the verb left-adjoins to *no*. As argued in Epée (1976b) and Biloa (1993), other possibilities can be excluded. For example, *no* is not a place holder since it does not occupy the exact position previously held by the extracted constituent. Furthermore, *no* is not a resumptive pronoun for the following reasons: pronouns must agree in noun class with their referring NPs, but *no* is invariable. Secondly, movement in Duala obeys island constraints. If *no* were a resumptive pronoun, we would expect that in Duala, as in Kikuyu, resumptive pronouns would help to circumvent island violations, but this is not the case:

- (46) *moto [nyena_j na nyaka *no* [nja muto_i t_j bai t_i]]
 man who I am-astonished who woman married
 (the man who_j I wonder which woman_i t_j married t_i)

Interestingly, *wh*-movement in Duala cannot stop part way up, i.e., there is no partial *wh*-movement in Duala. The *wh*-word has to stay either in CP₃, as in (47-a), or it has to move all the way up to the clause-initial CP₁, as in (47-b). It cannot be moved to stay in the clause-initial position of CP₂ (47-c) or CP₃ (47-d). (47-e) is similar to (47-c) except that *no* is not located in CP₂ but instead it is optionally realized in CP₁, the scopal specifier CP position of the *wh*-phrase. (47-e) shows that the partial *wh*-movement construction is absent in Duala.

- (47) a. [CP₁ O ta o pula [CP₂ na Kuo a keke [CP₃ wanea
 you AUX-PAST you want that K. he try bring
 muna-o nje]]] ?
 child-his what
 ‘What did you want Kuo to try to bring to his children?’
 b. [CP₁ Nje_i o ta *no* pula [CP₂ na Kuo a keke [CP₃
 what you AUX-PAST want that K. he try
 wanea muna-o t_i]]] ?
 bring child-his
 c. *[CP₁ O ta o pula [CP₂ na nje_i Kuo a keke *no* [CP₃
 you AUX-PAST you want that what K. he try
 wanea muna-o t_i]]] ?
 bring child-his
 d. *[CP₁ O ta o pula [CP₂ na Kuo a keke [CP₃ nje_i
 you AUX-PAST you want that K. he try what
 wanea *no* muna-o t_i]]] ?
 bring child-his
 e. *[CP₁ O ta (*no*) pula [CP₂ na nje_i Kuo a keke [CP₃
 you AUX-PAST want that what K. he try
 wanea muna-o t_i]]] ?
 bring child-his

On the other hand, the ungrammaticality of (47-cd) results from the fact that the realization of the [+wh]-feature in embedded clauses in Duala is subject to selectional restrictions imposed by the embedding predicate which are not

met, i.e., (47-cd) are ungrammatical for the same reasons as examples like (48-b) (= (11-b)) and (49-b):

- (48) a. Ich meine [_{CP} daß [_{IP} Peter Hans Maria vorgestellt hat]]
 I think that P._{nom} H._{dat} M._{acc} introduced has
 ‘I think that Peter has introduced Mary to Hans.’
 b. *Ich meine [_{CP} wem_i [_{IP} Peter t_i die Leute vorgestellt hat]]
 I think who_{dat} P._{nom} the people_{acc} introduced has
- (49) a. I think that Mary loves Peter
 b. *I think who_i Mary loves t_i

To sum up, we have seen in the discussion so far that in a language with overt *wh*-movement, such as German, partial *wh*-movement is possible, in contrast to other languages with overt *wh*-movement such as English. Similarly, a *wh*-in situ language such as Kikuyu, which may also use the *wh*-ex situ strategy for question formation, allows for partial *wh*-movement whereas in Duala, the partial *wh*-movement phenomenon is absent although Duala, like Kikuyu, may use the *wh*-in situ as well as the *wh*-ex situ strategy for question formation. Obviously, whether a language allows for partial *wh*-movement or not is independent of whether the language in question is a *wh*-ex situ or *wh*-in situ language. Then, why is partial *wh*-movement in Kikuyu possible as in German but impossible in Duala and English? In the next section we will see that an answer to this question can be given in terms of parameterized properties of features.

3. Analysis

In this section, I will discuss the theoretical assumptions for an analysis of the *wh*-movement properties including the absence/presence of partial *wh*-movement in the languages we have already discussed as well as the *wh*-in situ and full *wh*-movement properties. The main idea is that the observed asymmetries can be explained if it is assumed that *wh*-movement is simultaneously triggered by the need to check two kinds of features: [+wh]- and [+operator]-, i.e., [+focus]-features.

The idea that *wh*-movement is triggered by [+focus]-features in addition to [+wh]-features is addressed in section 3.1. Section 3.2 discusses the technical implications for this assumption especially in light of the question of what triggers successive-cyclic *wh*-movement. On the basis of this, in section 3.3, I develop an account of the absence/presence of partial *wh*-movement as well as of the other typological differences with respect to *wh*-movement found in the languages discussed in this article.

3.1. Wh-Movement as Focus-Movement

In what follows, I will first try to give an analysis of *wh*-movement in the languages we have already discussed based on the idea that *wh*-movement is simultaneously triggered by the need to check two kinds of features: [+focus]- and [+wh]-features.

The fact that *wh*-movement may be triggered by the need to check some [+focus]-features can be demonstrated with the following examples from Kikuyu, already mentioned in section 2.3. In Kikuyu, the questioned constituent may remain in situ (50-a) or move to clause-initial position (50-b) (Clements (1984)):

- (50) a. Kama.ú a-ón-¹íré o ?
 Kamau SP-see-T who (SP=Subject prefix; T=Tense/Aspect affix)
 ‘Who did Kamau see?’
 b. Nóo o-tɛm-íré mo-te ?
 FP-who PP-cut-T CP-tree (FP=Focus particle; PP=pronominal prefix)
 ‘Who cut a tree?’

In the latter case, the *wh*-word *o* combines with a focus particle *ne* to form *nóo*. The fact that in Kikuyu a focus-marker appears on the overtly extracted *wh*-element and not on *wh*-elements in situ provides evidence that [+focus]-features force overt *wh*-movement.

Further evidence for the latter hypothesis comes from the Austronesian languages. Bahasa Indonesia/Malay is a *wh*-in situ language which also possesses the *wh*-ex situ strategy. Note that in the SVO language Bahasa Indonesia/Malay (see Saddy (1990), Cole & Hermon (1995; 1998)), as in Kikuyu and Duala, *wh*-phrases may remain in situ (51-a) or move to the left periphery of the sentence (51-b). As pointed out by Saddy (1990, 188), the difference between *wh*-in situ and *wh*-ex situ is reflected by absence or presence of overt focus morphology, i.e., the focus-marker *yang*.

- (51) a. Sally men-cintai siapa ?
 Sally trans-loves who
 ‘Who does Sally love?’
 b. Siapa_i yang Sally cintai t_i ?
 who FOC Sally love
 ‘Who does Sally love?’

Now consider *wh*-extraction from embedded clauses. As can be seen from (52), long distance *wh*-movement leaves overtly realized focus-markers in the embedded as well as in the matrix clause:

- (52) [_{CP} Siapa_i yang Bill harap [_{CP} yang t_i akan membeli baju
 who FOC Bill hope FOC will buy clothes
 untuknya]] ?
 for-him
 ‘Who does Bill hope will buy clothes for him?’

We have seen that there is morphological evidence for the fact that short as well as long *wh*-movement is in fact an instance of focus-movement. Languages such as Kikuyu, in which a focus-marker appears overtly on the extracted *wh*-element, as well as languages such as Malay/Bahasa Indonesia in which the focus marker is not located on the moved *wh*-phrase itself but on functional heads, provide evidence that checking of [+focus]-features is involved if overt *wh*-movement takes place.

Furthermore, Malay/Bahasa Indonesia provides evidence that functional heads, probably C^0 or I^0 (see below), in intermediate clauses bear [+focus]-features of some sort that might be argued to trigger successive-cyclic movement of *wh*-elements by forcing movement of *wh*-phrases into the specifier position of a [-wh]-head. It is plausible to assume that *wh*-movement in languages such as English and German also applies in successive-cyclic manner for reasons having to do with [+focus]-features, although in these languages the [+focus]-feature is only covertly realized.

Note that the idea to analyze *wh*-movement as an instance of focus-movement is not new. This analysis is sometimes traced back to the (semantic) fact that a *wh*-element is inherently a focus. For example, in a sentence such as *I wonder what Susan said*, the *wh*-word is the focus of the question/clause *what Susan said* since the *wh*-phrase designates what is not presupposed as known. This assumption can be found in Rochemont (1978; 1986), Culicover & Rochemont (1983), Culicover & Wilkins (1984), Whitney (1984), Horvath (1986), Tuller (1986), Bresnan & Mchombo (1987), and Kiparsky (1995), among others. Horvath (1986, 118) explicitly states as a universal principle that focus is a syntactic feature that is assigned to a non-echo *wh*-phrase.

In addition, several syntactic arguments have been given for the view that *wh*-fronting takes place for focusing reasons. For example, Brody (1990; 1995a) assumes a functional category F(ocus) which projects into a focus phrase (FP) that is generated between IP/VP and CP. Brody furthermore argues for a *Focus Criterion* in analogy to the *Wh-Criterion* (10) to account for cross-linguistic variation with respect to the position of focused constituents in the overt and covert syntax. In Hungarian, where the *Focus Criterion* has to be fulfilled in the overt syntax (and at LF), the focused category must move in the overt syntax. It cannot stay in situ as in English, where the *Focus Criterion* applies only at LF. The example (53) (= (27-a)) from Hungarian that was already mentioned in section 2.2 also involves *wh*-movement into FP:

- (53) Mit mondta, hogy mire számítanak gyerekek ?
 WH_{acc} said_{Indef,2sg} that what_{Subl} count_{Indef,3pl} the-kids_{nom}
 ‘What did you say that the kids expected?’

In several other languages, *wh*-phrases move overtly into Spec FP. For example, Turano (1995) argues that in Albanian *wh*-movement into the focus position, i.e., into Spec FP, gives rise to partial *wh*-movement:

- (54) a. [_{CP} A mendon [_{CP} se Maria thotë [_{CP} se çfare_i ka sjelle
 Q you-think that M. says that what has brought
 burri t_i]]] ?
 her-husband
 ‘What do you think that Mary says her husband has brought?’
 b. [_{CP} A mendon [_{CP} se çfare_i Maria thotë [_{CP} se ka sjelle
 Q you-think that what M. says that has brought
 burri t_i]]] ?
 her-husband

Although the examples above may alternatively be analyzed in terms of CP-recursion, they illustrate *wh*-movement as an instance of focus-movement.¹¹

A further syntactic argument for the view that *wh*-movement is an instance of focus-movement was brought up with the observation (see Rizzi (1995)) that in contrast to multiple topics (55-a), multiple focused elements are impossible in a language such as Italian (56-a). Given that *wh*-phrases undergo focus-movement, it is predicted that a clause cannot contain a *wh*-operator and an additional focused element (irrespective of whether the *wh*-element precedes or follows the focus) (56-b), whereas a *wh*-phrase and a topic can co-occur (55-b) (Rizzi (1995)):

- (55) a. Il libro, a Gianni, domani, glielo darò senz'altro
 'The book, to John, tomorrow, I'll give it to him for sure.'
 b. A Gianni, che cosa gli hai detto ?
 'To Gianni, what did you tell him?'
- (56) a. *A GIANNI IL LIBRO darò (non a Piero, l'articolo)
 'TO JOHN THE BOOK I'll give, not to Piero the article.'
 b. *A GIANNI che cosa hai detto (, non a Piero)?
 TO GIANNI what did you tell (, not to Piero)?
 (*Che cosa A GIANNI hai detto (, non a Piero)?)

Interestingly, the same restriction holds with respect to focused elements in Kikuyu, where the [+focus]-feature is phonetically realized on the focused constituent. (57-a) resembles (56-a), and (57-b) is similar to (56-b) (examples from Clements (1984, (20), (19))):

- (57) a. *Né Kaanáké né Káma.ú ó-ring-íré
 FP- K. FP- K. PP-hit-T (FP=Foc. prt.; PP=pron. prefix)
 'It's Kanake (that) it's Kamau (that) hit.'
 b. *Nóo né Káma.ú ó-ring-¹íré ?
 FP-who FP- K. PP-hit-T (OP=object prefix)
 'Who is it Kamau (that) hit?'
 (compare: Né Káma.ú ó-ring-¹íré o ?
 FP- K. PP-hit-T who)

The occurrence restrictions in (56-a) and (57-a) suggest that a sentence may contain only one position for a focused constituent in Italian and Kikuyu. Similarly, if focused constituents and *wh*-phrases share the same landing site, the impossibility of (56-b) and (57-b) shows that *wh*-movement is an instance of focus-movement and can also be traced back to a typical movement restriction, i.e., to what has traditionally been called a "Doubly-Filled Comp Effect." Hence, the impossibility of (56) and (57) may be due to the fact that there is only a single position for focused constituents in Italian and Kikuyu, or, given an analysis in terms of feature-checking (see the next section), it may be due to a parametric property

¹¹Kiss (1995, 23) also mentions Somali, Chadic, Aghem, Basque, Hungarian, Haida, Omaha, Quechua, Korean, and Greek as examples of languages where focused elements occupy the same position as *wh*-phrases. Authier (1988) observes similar restrictions in Kinande.

of the [+focus]-feature in the functional head, i.e., after it has been “checked” by a constituent it may not escape “erasure” in Italian and Kikuyu, in contrast, for example, to topic features, which may escape erasure after they have been checked. Given that erased features are invisible to the computational system, (in contrast to a checked feature that is not erased, like the topic feature in (55-a)) the [+focus]-feature is no longer accessible to the computational system and may therefore not be checked more than one time (Chomsky (1995, 286; 354f.)).¹²

In this section I have discussed facts from several distinct languages showing that *wh*-phrases and focus-phrases exhibit similarities in their syntactic distribution. This lends considerable support to the analysis of *wh*-movement as an instance of movement driven not only by a [+wh]-feature but also by a [+focus]-feature. I assume that languages may vary with respect to the realization of the [+focus]-feature in I^0 or C^0 , but it is also possible that in some languages this

¹²In the discussion above, I have assumed that the position associated with structural focus is the specifier position of CP or FP. Some comments concerning this assumption are in order here. In contrast to languages such as German where *wh*-movement applies to the left periphery of the sentence, languages such as Albanian, Greek, Hungarian, Kikuyu, Tuki, Yiddish, and Spanish, among others, have in common that in embedded clauses the *wh*-phrase is moved into a position to the right of the complementizer. According to Bhatt & Yoon (1991), this results from the fact that C^0 is not a unified category (both functionally and structurally) in the languages of the world. Languages such as German conflate the different ‘complementizer’ functions (or features) in C^0 , whereas in the above mentioned languages the ‘complementizer’ is decomposed into its different functions (or features). Consequently, C^0 in the latter languages acts as a pure subordinator. It has also been pointed out in the literature that there is some variation among languages with respect to the position in which the [+focus]-feature is realized (see Anyadi & Tamrazian (1993), Horvath (1995), and Rizzi (1995) for a discussion of various possibilities). In addition, some languages – Kiss (1995) mentions Japanese as a candidate – do not seem to use a structural focus position at all whereas others have a structural focus position. These are, according to Kiss (1995), the “discourse configurational languages.”

Concerning the discourse configurational languages, we have to divide between focus-in situ languages and languages with other special focus-positions. Concerning the latter, the [+focus]-feature in some languages may simply be located in C^0 , as in German (Anyadi & Tamrazian (1993)), Kinande (Authier (1988)), and Hausa (Tuller (1986)), whereas in other languages such as for example Albanian (Turano (1995)), Bulgarian (Izvorski (1995)), Greek (Tsimpli (1995)), Hungarian (Horvath (1986; 1995); Brody (1990; 1995); Puskàs (1992; 1997); Kiss (1995; 1998)), Kikuyu (Clements (1984)), Sinhala (Gair & Sumangala (1991)), and Tuki (Bilola (1995)), the focus feature heads a Focus Phrase (FocP) dominated by CP. Alternatively, it has been pointed out by several authors that focus can be closely related to I^0 (see Bhatt & Yoon (1991)), which opens up the possibility that focus-movement to IP is a further option. Relevant analyses with respect to *wh*-movement in Yiddish and Spanish are proposed in Diesing (1990), Goddall (1991; 1993), and Fontana (1993).

Horvath (1995) notes that the variability of focus positions in the languages of the world argues against Brody’s (1990) analysis in terms of a universal FP-projection combined with the parameterized *Focus-Criterion*. Instead, Horvath assumes that the relevant parametric property with respect to [+focus]-features is whether they are realized in I^0 or C^0 . Which of these approaches is correct is an empirical question; the approaches mentioned are all compatible with the view that only functional elements are subject to parameterization. In Sabel (1998), I argue for a similar distinction as Horvath with respect to the functional X^0 -categories I^0 and C^0 which may host the [+wh]-feature.

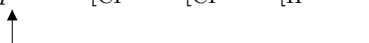

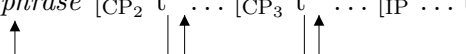
A final distinction with respect to focus-positions concerns the fact that some languages have more than one focus-position, i.e., German has a focus position in Spec CP and in situ (see also fn.9 for further possibilities).

feature heads its own projection FP. Nevertheless, in what follows, for ease of presentation, I will simply refer to C^0 as bearing [+focus]-features if nothing of significance hinges on the distinction mentioned above.

3.2. Successive-Cyclic Wh-Movement and Feature-Checking

Let us now turn to the analysis of movement as triggered by feature-checking, and successive-cyclic and partial *wh*-movement. Recall the way transformational operations are implemented in the Minimalist Program. Chomsky (1995, 222) assumes that movement is a morphology-driven or, in other words, feature-driven operation. Movement is driven by the need to check some features, i.e., by the so-called *Last Resort Condition*.

In connection with this theoretical assumption, there has been some discussion of how to analyze long *wh*-movement in the minimalist framework. Is it derived via one long *wh*-movement of the *wh*-phrase to the [+wh] checking position (58-a) and insertion of intermediate traces by *Form Chain* (58-b) (see Chomsky (1995, ch. 3)), or – as traditionally assumed – by successive-cyclic movement via intermediate Spec CP positions until the *wh*-phrase reaches the highest Spec CP position which is the only checking-position for the *wh*-element with respect to the [+wh]-feature, as in (58-c)?

- (58) a. $[CP_{[+wh]} Wh\text{-phrase} [CP \dots [CP \dots [IP \dots t \dots]]]]$

- b. $[CP_{[+wh]} Wh\text{-phrase} [CP t'' [CP t' [IP t]]]]$

- c. $[CP_{1[+wh]} Wh\text{-phrase} [CP_2 t'' \dots [CP_3 t' \dots [IP \dots t \dots]]]]$


However, (58-c) raises the question of what forces the intermediate movement steps. If we adopt the successive-cyclic movement approach in conjunction with the assumption that movement is triggered solely by feature-checking, we are forced to assume that movement through intermediate positions also applies to satisfy feature-checking. It should be obvious that example (52) from Malay/Bahasa Indonesia provides the basis for an argument according to which successive-cyclic movement into intermediate positions is triggered by [+focus]-features. In this language, overt morphological evidence for the fact that an embedded functional projection may bear a [+focus]-feature was found in connection with *wh*-movement. A natural (technical) implementation of this idea could rely on the assumption that in the case of *wh*-movement the embedded C-heads bear some [+focus]-features that need to be checked. Each application of *wh*-movement in (58-c) can be conceived of as a feature-driven movement:¹³

¹³For the hypothesis that *wh*-movement proceeds in a successive-cyclic manner see Kayne & Pollock (1978), Reinhart (1981), Browning (1987, 309ff.), Thornton (1990, 247), Collins (1993),

$$(59) \quad [{}_{CP_1[+wh/+focus]} Wh\text{-phrase} \dots [{}_{CP_2[+focus]} t'' \dots [{}_{CP_3[+focus]} t' [IP \dots t \dots]]]]$$

The examples from Malay/Bahasa Indonesia and Kikuyu have shown that [+focus]-features occur on *wh*-phrases as well as on functional heads. Although these features are overtly realized only in some languages, I will assume that they are involved in *wh*-movement in all languages. To be more precise, I assume that *wh*-phrases have to check [+focus]- as well as [+wh]-features, although the latter are always located in the position where the *wh*-phrase takes its scope. The [+focus]-feature, like the [+wh]-feature, is assigned to the respective functional heads and *wh*-phrases in the numeration. If a [+wh]-feature is realized in C_1^0 (see (59)), a [+focus]-feature always co-occurs in C_1^0 and in further C^0 's embedded under C_1^0 . This may be the result of a 'feature-percolation' procedure which stops as soon as the first clause that contains a *wh*-phrase is reached, or, alternatively, it may be the result of a selectional process (Collins (1993)).¹⁴ Let us briefly recall the elementary assumptions concerning the mechanisms of feature-checking. According to Chomsky (1995, ch. 4), features are [\pm interpretable]¹⁵ and [\pm strong]. If the [+interpretable] [+wh]-feature in the head of the attractor (C^0) is strong, as for example in English (see below), it triggers overt *wh*-movement. On the other hand, if the [+interpretable]-feature in the functional head is weak, no movement takes place, giving rise to *wh*-in situ. A *wh*-element in situ is bound (coindexed and c-commanded) by the [+wh] scopal position in which the *wh*-phrase is interpreted (see fn.1). Weak [+interpretable] features need not be checked. Therefore, *wh*-phrases (or their [+wh]-features) which are not in a Spec head relation with a [+wh]-head at *Spell-out* are not moved at LF. In contrast, [-interpretable] features (such as Case) need to be checked in any event, and hence are eliminated at LF. Furthermore, [-interpretable] features (in contrast to [+interpretable] features) on XPs immediately disappear after checking. This prohibits, for example,

Chung (1994), Ferguson & Groat (1994), Thornton & Crain (1994). Furthermore, relevant empirical evidence can be provided with constructions from Irish which suggest the necessity of successive-cyclic movement (see Chung & McCloskey (1987), McCloskey (1990), Nakamura (1995), and Collins (1997) for discussion).

¹⁴Another technical solution which dispenses with the mechanism "percolation" would be to assume that the *wh*-phrase in (59) may have three hierarchically ordered [+focus]-features {[F₁], [F₂], [F₃]} and that the corresponding C-heads also bear different [+focus]-features: [F₁], [F₂], and [F₃] (for the assumption of hierarchically ordered features see also Chomsky (1995, ch. 4) and Sabel (1998, ch. 3)).

In addition, one may wonder what excludes the following derivation in which the intermediate C^0 in (59) is merged too "late" and appears as the highest one.

$$(i) \quad [{}_{CP_1[+focus]} Wh\text{-phrase} \dots [{}_{CP_2[+wh/+focus]} t'' \dots [{}_{CP_3[+focus]} t' [IP \dots t \dots]]]]$$

The derivation in (i) is excluded. Under the assumption that the matrix verb embeds a [-*wh*-clause], C_2^0 violates selectional restrictions.

¹⁵[+Interpretable] features, i.e., φ -features of nominals, [+wh]-features (on *wh*-phrases), Q-Features (= the [+wh]-feature in C^0), and categorial features have semantic effects and enter into interpretation at LF in contrast to [-interpretable] features, i.e., φ -features of non-nominals, Case-features, affix-features, and strong features.

an NP from checking one and the same feature more than once.

Let us now turn to the [+focus]-feature. Given that focus has semantic effects, it is plausible to assume that the [+focus]-feature is also [+interpretable]. Hence, a strong [+focus]-feature on a functional head triggers overt movement, whereas a weak [+focus]-feature leaves a focus-XP in situ if its movement is not triggered by another strong feature (as for example a strong [+wh]-feature, see below). Consider the following examples from Hungarian (60) and Kikuyu (61).

- (60) a. *Szeretem JANOST
 like-I J._{acc}
 ‘I like JOHN.’
 b. JANOST szeterem
 J._{acc} like-I
- (61) a. Kariokĩ á-¹tém-íré mo-tě !
 K. SP-cut-T CP-tree (CP=Nominal class prefix)
 ‘Kariuki cut a tree.’
 b. Ne Káriokĩ ó-tém-¹íré mo-te?
 FP- K. PP-cut-T CP-tree (FP=Focus particle, PP=pronominal prefix)
 ‘It’s Kariuki (that) cut a tree?’

Hungarian and Kikuyu are focus-ex situ languages. This implies that these languages may have only strong focus features in the functional head (either F⁰, I⁰, or the C⁰ head in a recursive structure; see fn.12) which attracts the focused element. If the [+focus]-features combine with lexical items in these languages, this feature needs to be checked by overt movement/attraction as in (60-b) and (61-b), where the [+focus]-feature in the functional head attracts the [+focus]-feature inside NP. As a result of this movement, the strong [+focus]-feature in the functional head is eliminated.¹⁶

Now we can turn to the important question of what happens in *wh*-questions in languages such as Hungarian and Kikuyu, since in *wh*-movement constructions [+focus]- as well as [+wh]-feature-checking applies. Consider the following example. Assuming that [+focus]-features are involved in *wh*-movement constructions, we can conclude that the *wh*-phrase in (62) is located in the same (focus-) position as the focused element in (60-b) and in partial *wh*-movement constructions (63).

- (62) Kivancsi vagyok [CP hogy [kit_i [hivott fel [Mari t_v t_i]]]]
 I wonder that who_{acc} called up M.
 ‘I wonder who Mary called.’

¹⁶This analysis treats [+focus]-features and [+wh]-features alike and predicts that we should find similar typologies with respect to *wh*- and focus-movement. In fact, this seems to be the correct prediction. Languages with weak [+focus]-features such as English (see below) may only have focus-in situ constructions, whereas languages such as Bulgarian have overt fronting of all focused constituents; in other languages such as German only one focused constituent is moved and the others remain in situ. Other languages such as Italian and Somali only tolerate one focused constituent (compare fn.1).

- (63) Mit mondta_l, hogy mire_i számitanak gyerekek t_i ?
 WH_{acc} said_{Indef,2sg} that what_{Subl} count_{Indef,3pl} the kids_{nom}
 ‘What did you say that the kids expected?’

However, (62) represents an embedded question, whose Spec CP position is not filled with a *wh*-phrase. This raises the question of how and when the selectional restrictions of the matrix predicate are satisfied in (62). Given that Hungarian does not show overt *wh*-movement into the position where the *wh*-phrase takes scope, one can conclude that the [+wh]-feature in languages such as Hungarian is weak (as in ‘real’ *wh*-in situ languages, see fn.25) and that *wh*-movement is *exclusively* triggered by [+focus]-features.

I will elaborate on this aspect in the following section, where I argue that this conclusion provides the basis for an account of the partial *wh*-movement phenomenon also in languages such as German which – in contrast to Hungarian – use only one position for [+focus]- and [+wh]-feature checking, namely Spec CP.

To sum up, in this section we have seen that there is morphological evidence for the assumption that [+focus]-features trigger overt (successive-cyclic) *wh*-movement. Given that *wh*-movement is simultaneously triggered by [+focus]- and [+wh]-features, the question to be addressed in the next section is then, whether the typological differences discussed so far can be explained on the basis of this assumption. It is obvious that we can make use of the idea that [+focus]-features trigger *wh*-movement to explain that in partial *wh*-movement constructions we generally observe that *wh*-elements move up in non-scope specifier positions, i.e., in positions where no [+wh]-feature is checked. Furthermore, the feature-based analysis opens up a possibility for a unitary account of parametric variations with respect to *wh*-movement.

3.3. A Feature-based Account of Partial Wh-Movement, Full Wh-Movement, and Wh-in situ

Overt *wh*-movement and *wh*-in situ can be analyzed as resulting from different mechanisms of feature-checking, i.e., as differing in the strength of the features of the functional heads that trigger *wh*-movement. Assuming that *wh*-phrases have to check [+focus]- as well as [+wh]-features, although the latter are always located in the position where the *wh*-phrase takes its scope, we can explain the parametric variation of *wh*-movement discussed in the preceding sections on the basis of the feature-values in (64).

(64)

	GERMAN	ENGLISH	DUALA	KIKUYU
Focus-Feature	strong	weak	weak	weak/strong
Wh-Feature	weak	strong	weak/strong	weak

Let us start with partial *wh*-movement in German. I assume that in German, the [+focus]-feature in C⁰ is strong and the [+wh]-feature in C⁰ is weak. The strong [+focus]-feature excludes *wh*-in situ in German. The situation in German is the same as in Hungarian except that [+wh]-features and [+focus]-features are

both located in the same (C-) head. Furthermore, we can simply assume that in (65) and (66) the *wh*-expletive checks the strong [+focus]-feature in C_1^0 and C_2^0 .¹⁷ Recall that I made the following assumption: if a [+wh]-feature is realized in C_1^0 , a [+focus]-feature always co-occurs in C_1^0 and in further C^0 's embedded under C_1^0 . The *wh*-phrase obligatorily moves to Spec CP₃ (65) and Spec CP₂ (66) for the same reason that *wh*-expletive insertion applies, i.e., in order to check the strong [+focus]-feature in C^0 . The weak [+interpretable] [+wh]-feature in C_1^0 need not be checked.

- (65) [_{CP₁} Was meinst du [_{CP₂} was Peter glaubt [_{CP₃} wen_i Maria t_i
 WH think you WH P. believes who_{acc} M.
 liebt]]] ?
 loves
- (66) [_{CP₁} Was meinst du [_{CP₂} wem_i [_{IP} Peter t_i die Leute
 WH think you_{nom} who_{dat} P._{nom} the people_{acc}
 vorgestellt hat]]] ?
 introduced has

Alternatively, if we start with a numeration that does not contain the *wh*-expletive, the *wh*-phrase in Spec CP moves up to the highest Spec CP position and checks the strong [+focus]-features as a result of movement:¹⁸

¹⁷I leave open whether this checking operation results from *Move* as pointed out in fn.3, or from *Merge* and *Move*. Concerning the latter, see Chomsky (1995, ch. 4) for the possibility to check strong features in C^0 via the operation *Merge* (see also Fanselow & Mahajan (1996) for relevant discussion).

¹⁸The feature-checking analysis requires movement of the true *wh*-phrase in (i), but it leaves open why the same movement is impossible in (ii-b) where the scope position of the partially moved *wh*-phrase is occupied by another ‘true’ *wh*-phrase:

- (i) a. *Was glaubst du [daß Hans wen getroffen hat] ?
 WH believes you that H. who met has
 b. Was glaubst du [wen_i Hans t_i getroffen hat] ?
 WH believes you who H. met has
- (ii) a. Wer_i glaubt t_i [daß Hans wen getroffen hat] ?
 who believes that H. who met has
 b. *Wer_j glaubt t_j [wen_i Hans t_i getroffen hat] ?
 who believes who H. met has

The ultimate resolution of this asymmetry is beyond the scope of this article. However, we can assume that every *wh*-chain must contain one and only one ‘true’ *wh*-phrase which has to be located in an operator-position. This excludes (i-a), (ii-b) as well as (iii) where the *wh*-expletive occurs with another *wh*-in situ in the same clause. In other words, the *wh*-chains in these examples are not well formed. See Stechow & Sternefeld (1988, 355) for a similar explanation of the ungrammaticality of (ii-b), (iii).

- (iii) a. *Was hat wer hier geschlafen ?
 WH has who_{nom} here slept
 b. *Was glaubst du [was Hans wen getroffen hat] ?
 WH believes you WH H. who_{acc} met has

Another explanation for (i)–(iii) has to be given if the analysis outlined in fn.3 is adopted. The underlying idea has to be that the [+focus]-feature bundle *was* can only be sub-extracted from a

- (67) [_{CP} Wem_i meinst du [_{CP} t'_i daß [_{IP} Peter t_i die Leute
 who_{dat} think you_{nom} that P._{nom} the people_{acc}
 vorgestellt hat]]] ?
 introduced has

In the full *wh*-movement construction, the result of the derivation is exactly as in English (68-c), in so far as the true *wh*-phrase occurs in its scopal position. On the other hand, in English, full *wh*-movement is triggered by the opposite feature-values, as shown in (64). Given that in English the [+wh]-feature is always strong, *wh*-phrases must end up in the overt syntax in the position in which they take scope. This excludes *wh*-in situ and partial *wh*-movement (68-ab). The latter is impossible since a *wh*-expletive (either overt (68-a) or covert (68-b)) can only check a [+focus]-feature but not a (strong) [+wh]-feature. Therefore, the strong [+wh]-feature in (68-ab) remains unchecked in the overt syntax and the derivation crashes.¹⁹

- (68) a. * [_{CP} What do you think [_{CP} who_i [_{IP} Mary loves t_i]]] ?
 b. * [_{CP} O [_{IP} John thinks [_{CP} who_i [_{IP} Mary loves t_i]]]]] ?
 c. [_{CP} Who_i do you think [_{CP} t'_i that Mary loves t_i]]] ?

We can explain what happens in Duala in the following way. Assume that Duala has a strong *and* a weak [+wh]-feature.²⁰ The realization of the strong [+wh]-feature in this language coincides with the appearance of *no*.²¹ Therefore, *wh*-movement is only obligatory in Duala if the strong [+wh]-feature is selected from the lexicon and *no* is realized:

wh-phrase in focus-positions, and that this extraction must take place if full *wh*-movement does not apply (for discussion see Sabel (1998)).

¹⁹If we look at the options in (64), a question arises as to whether checking of a strong [+wh]-feature and [+focus]-feature can take place in the same position (for example, Spec CP). I assume that every step of visible movement can only have one motivation, which can possibly be derived from economy principles (see Grewendorf & Sabel (1999)). It is excluded that a particular step of overt movement is triggered by two different strong features.

²⁰Given the feature-checking analysis, the assumption that a language may use weak and strong features of a certain type seems to be independently necessary in order to account for word order variants. Chomsky (1992, 44), for example, suggests that the VSO – SVO word order alternation in Arabic may result from the optional use of either strong or weak NP-features.

²¹Compare also the use of *no* as a [+wh/+pred]-head in the sense of Rizzi (1990) in examples such as (44-d). In addition, *no* also appears in other contexts of A'-movement (see Epée (1975) for discussion). Hence, this morpheme can serve different functions. Note, however, that *no* is not a focus-marker, which is realized in this language as *nde*. *No* behaves exactly like the "relative tense/aspect" *wh*-agreement morpheme in Hausa (Tuller (1986)) which could likewise be analyzed (in one of its uses) as a strong [+wh]-feature or as a phonetic reflex of it. It differs from the relevant phonetic/morphological effects on verbs in languages such as Kikuyu in that in long extraction contexts it only shows up on the verb in the CP in which the moved element ends up (and not on the verbs in more deeply embedded intermediate CPs), see Haik (1990) for discussion. It is possible that in Kikuyu *all* verbs between the operator and the variable show *wh*-agreement as a reflex of successive-cyclic [+focus]-feature checking.

- (69) a. *O bodi *no* nja moni ?
 you give Q who money
 b. Nja_i o bodi *no* t_i moni ?
 who you give Q money
 ‘Who did you give the money to?’

Interestingly, Duala seems to represent a language which provides a counterexample to the often drawn generalization based on languages such as Chinese and Japanese (see Baker (1970), Bach (1971), Bresnan (1972), Aoun & Li (1993), Cole & Hermon (1995), among others) that languages with a *wh*-particle (or a Q-marker in a functional head position) do not have overt *wh*-movement.²²

No behaves like the equivalent of the [+wh]-feature *ka* (70) in Japanese. *Ka* and *no* contrast with *wh*-expletives (71) in that these elements may co-occur with *wh*-phrases in situ in the same clause.²³

- (70) [CP John-ga Mary-ni [CP Bill-ga nani-o katta ka] osieta] (koto)
 J._{nom} M._{dat} B._{nom} what_{acc} bought Q told

- (71) a. *Was ist er wem begegnet ?
 WH is he_{nom} who_{dat} met
 b. *Was glaubst du [CP was er wem begegnet ist] ?
 WH believe you what he who_{dat} met is

No is a phonetic reflex of the realization of the strong [+wh]-feature. Since in Duala the (invisible) [+focus]-feature is always weak, *wh*-movement is expected to be impossible if *no* is not realized (72), (73-a) ((72) = (41)):

²²See Epée (1976c) for discussion. Also, Albanian represents a counter-example to this generalization (see fn.23), as well as Sharanahua (Frantz (1973)). Furthermore, under the analysis of *wh*-constructions in Japanese, as presented in Takahashi (1993), Sabel (1998), Grewendorf & Sabel (1999), Japanese is also incompatible with this generalization.

²³In Albanian, a language that also has partial *wh*-movement (i-b) (see also (54)), the marker *a* in an intermediate Spec CP is not possible, as illustrated in (i-c) vs. (i-a) (Turano (1995), see also Anyadi & Tamrazian (1993)):

- (i) a. [CP₁ A mendon [CP₂ se Maria thotë [CP₃ se kush ka lexuar librin]]] ?
 Q think_{2S} that M. says that who has read book-the
 ‘Who do you think that Mary says read the book?’
 b. [CP₁ A mendon [CP₂ se kush_i thotë Maria [CP₃ se t_i ka lexuar librin]]] ?
 Q think_{2S} that who says M. that has read book-the
 c. *[CP₁ A mendon [CP₂ a Maria thotë [CP₃ se kush ka lexuar librin]]] ?
 Q think_{2S} Q M. says that who has read book-the

However, the data suggest that *a* is the phonetic reflex of a [+wh]-feature like *ka* in Japanese and *no* in Duala. Like *ka* and *no*, the *wh*-particle *a* does not bear case and may also co-occur with *wh*-in situ in the same clause. But interestingly, the *wh*-phrase can then no longer be interpreted as an interrogative element; see Turano (1995) for discussion:

- (ii) A pe kush rrugës ?
 Q saw_{2S} somebody/*who street
 ‘Did you see somebody in the street?’/*‘Who did you see in the street?’

- (72) a. *O bodi *no* nja moni ?
 you give PRTCL who money
 b. Nja o bodi *no* moni ?
 who you give PRTCL money
 ‘Who did you give the money to?’

[+Focus]-features are only checked as “free riders” if the strong [+wh]-feature *no* is realized and triggers overt successive-cyclic movement, as in (73-b). Note that this analysis raises the same problem that arises for *wh*-extraction of objects in English (see Chomsky (1995, 302)). In sentences like *What did John see t* the *wh*-phrase is supposed to move to Spec CP in the overt syntax to check the strong *wh*-feature in C^0 . Given that the accusative Case feature in English is weak, the question arises as to whether the object moves to an intermediate landing site in the overt syntax, where it checks accusative, as in *What did John t' see t*. Verb movement in Mainland Scandinavian raises a similar question. In languages such as Swedish, the verb remains in situ in non-verb second clauses. On the other hand, V-to-Infl movement seems to be possible just in case the verb moves to C^0 , i.e., in verb second clauses (see Richards (1997, ch.4) for further examples). Thus, it seems to be possible that certain positions cannot serve as a final but only as an intermediate landing site. Given that the intermediate landing-positions in question are potential landing sites for the moved element, it moves through these intermediate positions in overt syntax. In this sense, [+focus]-features in (73-b) are checked as “free riders.” As already mentioned in section 2.4, the ungrammaticality of (73-cd) results from the fact that the realization of the [+wh]-feature in embedded clauses in Duala is subject to selectional restrictions which are not met, i.e., (73-cd) are ungrammatical for the same reasons that examples like (49-b) are, repeated here as (74):

- (73) a. [CP_1 o ta o pula [CP_2 na Kuo a keke [CP_3 wanea muna-o
 you AUX you want that K. he try bring child-his
 nje]]] ?
 what
 ‘What did you want Kuo to try to bring to his children?’
 b. [CP_1 nje_i o ta *no* pula [CP_2 na Kuo a keke [CP_3 wanea muna-o t_i]]] ?
 c. * [CP_1 o ta o pula [CP_2 na nje_i Kuo a keke *no* [CP_3 wanea muna-o t_i]]] ?
 d. * [CP_1 o ta o pula [CP_2 na Kuo a keke [CP_3 nje_i wanea *no* muna-o t_i]]] ?
 e. * [CP_1 o ta pula [CP_2 na nje_i Kuo a keke [CP_3 wanea muna-o t_i]]] ?
 f. * [CP_1 o ta *no* pula [CP_2 na nje_i Kuo a keke [CP_3 wanea muna-o t_i]]] ?
- (74) *John thinks [CP who_i [IP Mary loves t_i]]

(73-ef) shows that partial *wh*-movement may not take place in Duala irrespective of whether the strong or the weak [+wh]-feature is selected. The reason is that the [+focus]-feature is weak in Duala. Hence, no partial *wh*-movement may take place, no matter whether the weak [+wh]-feature is selected, or whether the strong [+wh]-feature is selected. The ungrammaticality of partial *wh*-movement (73-e) is a consequence of the fact that the weak [+focus]-feature in Duala may not trigger

movement into an intermediate position. On the other hand, the realization of the strong [+wh]-feature in the matrix clause in (73-f) also excludes the possibility that a *wh*-phrase stays in the Spec CP position of a [-wh]-clause.

In contrast to Duala, the [+wh]-feature in Kikuyu is always weak and the [+focus]-feature is either strong *or* weak (64). The fact that the [+focus]-feature may be weak or strong in the first place has the consequence that Kikuyu may have *wh*-in situ as well as overt *wh*-movement, in contrast to German. Secondly, it gives rise to partial *wh*-movement in Kikuyu. In *wh*-questions without *wh*-movement, the weak [+focus]-feature is selected and the *wh*-element stays in situ. In contrast, in (75), the strong [+focus]-feature is selected and overtly checked:

- (75) a. [CP₁ Nóoi ó-γw-eciiri-a [CP₂ Ngoγe a-úγ-írε [CP₃ áte t_i o-ɔn-íré
 FP-who SP-T-think-T N. SP-say-T that PP-see-T
 Kaanakε]]] ?
 K.
 ‘Who do you think Ngugi said saw Kanake?’
 b. [CP₁ Ó-γw-!éciiri-á [CP₂ nóoi Ngoγe a-úγ-írε [CP₃ áte t_i o-ɔn-íré
 Kaanakε]]] ?

If *wh*-movement stops in an intermediate Spec position in which the *wh*-phrase is not interpreted (75-b), this results from the fact that the weak [+wh]-feature in C₁⁰ does not trigger overt movement into the scope position Spec CP₁. However, given the assumption that the strong [+focus]-feature is assigned to every C⁰ in (75-b), the further assumption has to be made that Kikuyu has a phonetically empty counterpart to the German *wh*-expletive *was*, which is located in Spec CP₁ in (75-b). This empty *wh*-element checks the strong [+focus]-feature of C₁⁰.

The weak [+interpretable] [+wh]-features need not be checked by movement. Therefore, in (75-b), the *wh*-phrase or its [+wh]-feature which is not in a Spec head relation with a [+wh]-head at *Spell-out* is not moved at LF (exactly as in German).

Turning back to question (9) raised in section 2.1, i.e., what kind of parametric property is responsible for the fact that some languages allow for partial *wh*-movement whereas others do not, I have tried to show that the answer to this question can be traced back to the parametric properties of the features that force *wh*-movement: [+focus]- and [+wh]-features.^{24,25}

²⁴The approach I have suggested for German and Kikuyu can be extended to Hungarian and Albanian. However, the extension to Albanian requires the assumption that this language, in contrast to Hungarian and German, has an empty *wh*-expletive like Kikuyu. Furthermore, the approach I have suggested for (partial) *wh*-movement in Kikuyu and Albanian can be extended to Malay/Bahasa Indonesia (Saddy (1990)), Palauan (Georgopoulos (1991)), and Iraqi Arabic (Wahba (1991)), although Iraqi Arabic seems to possess overt as well as empty *wh*-expletives.

²⁵One final remark with respect to *wh*-in situ is in order. So far we have seen that ‘real’ *wh*-in situ in languages such as Kikuyu and Duala is a consequence of weak [+wh]- and [+focus]-features. This analysis can be extended to *wh*-in situ in languages such as Chinese (1) and Malay/Bahasa Indonesia (51) in which *wh*-in situ is not subject to island constraints. ‘Real’ *wh*-in situ is given in constructions with unselective binding where the *wh*-element in situ represents a case of a trivial (one-membered) chain. On the other hand, *wh*-in situ-constructions in languages

Note that the analysis presented here makes two interesting predictions. Firstly, it predicts that partial *wh*-movement does not exist with relative clauses. As far as I know this prediction is confirmed universally. This follows from the fact that a relativized constituent universally bears the topic function. In a sentence like *The car which you don't want is a Renault* the relative pronoun is the topic of the clause *which you don't want* (see Bresnan & Mchombo (1987)). Note that the case of a pronoun that surfaces in a clause other than that adjacent to the head NP as found in relative clauses in Hebrew (see Reinhart (1981)) does not represent a counterexample. This construction involves a dislocated resumptive pronoun as argued in Sells (1984) and Demirdache (1991).

Another interesting prediction concerns *wh*-questions. Given my analysis, one would expect that a *wh*-phrase in questions cannot be topicalized. Again, as far as I know, this prediction is borne out. For example, *wh*-phrases in Japanese may not occur with the topic-marker *wa* (with *wa* they receive only a contrastive interpretation).

4. Summary

Let us summarize the main results. I have argued that *wh*-movement is triggered by [+wh]- and [+focus]-features. The three different *wh*-movement constructions (partial *wh*-movement, full *wh*-movement, and *wh*-in situ) are due to the parameterization of [\pm strong] [+wh]- and [+focus]-features. Languages with partial *wh*-movement differ from languages like Duala and English, which have no partial *wh*-movement, with respect to the strength [+wh]- and [+focus]-features may have. In languages in which we do not find partial *wh*-movement, the [+focus]-feature is always weak, whereas in languages or constructions in which we have partial *wh*-movement, the [+focus]-feature is strong and the [+wh]-feature is always weak. Furthermore, a unified account for partial *wh*-movement in languages such as German and Kikuyu can be given if we assume that languages with partial *wh*-movement vary with respect to the use of overt or covert *wh*-expletives. Full *wh*-movement constructions are ambiguous since they may result from strong [+wh]-features, as in Duala and English, or from strong [+focus], features as in German and Kikuyu. Finally, 'real' *wh*-in situ constructions result from the use of weak [+wh]- and [+focus]-features in a language.

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such as Japanese have to be analyzed differently (see fn.1). The fact that *wh*-in situ in Japanese is subject to island constraints suggests that it has to be re-interpreted as involving 'invisible copy-movement' (or operator-movement in the sense of Watanabe (1991)) that applies in the overt syntax of Japanese, in contrast to 'real *wh*-in situ' languages.

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