

Cyclic Derivation in Partial Wh-Movement*


Tobin R. Skinner
McGill University

ABSTRACT

A partial wh-movement construction is one in which a contentful wh-phrase moves to a SpecCP lower than that from which it takes scope, while a wh-expletive with no apparent semantic value appears in the wh-scope position, and in every intervening specifier of CP. Two competing types of analysis have been put forth to explain this sort of movement: a direct wh-dependency approach (McDaniel 1989), and an indirect wh-dependency approach (Horvath 1997, Fanselow & Mahajan 1996). By employing the Minimalist notion of derivation by phase (Chomsky 2000, 2001a), this paper proposes an account of partial wh-movement that supports the indirect wh-dependency approach. Following Felser (2001), I posit that the wh-expletive is base-generated as an argument in object position of the verb, and that, through a type of small-clause predication, an association is established between the embedded CP and the wh-expletive through which Case and ϕ -features are shared. Furthermore, I establish a theory of expletive insertion and movement in keeping with Chomsky's (1993) Last Resort condition. In this way, we may implement pre-existing theoretical machinery to explain the mechanics that underlie partial wh-movement.

1. INTRODUCTION

In the field of generative syntax, it has been proposed that various constituents of language must be displaced or moved from their original positions in order to satisfy certain grammatical principles. This movement is nowhere more evident than in many languages' formation of interrogatives (e.g. English):

- (1) Who do you think she saw _____ ?
An arrow points from the blank space at the end of the sentence back to the word 'Who' at the beginning.

In (1), we see that the wh-phrase *who* has moved from its base position as an argument of the verb *saw* to the matrix SpecCP, which is also the position from which it takes its semantic scope. In an English question with a single wh-phrase, the wh-word must move to the specifier of the CP from which its scope is interpreted. However, this is not the case for all languages. Some languages, such as Mandarin, leave the wh-word in its base position, or in situ. In addition to

* The current work is a revised edition of my M.A. thesis at Boston University. Special thanks to Paul Hagstrom for his invaluable comments and suggestions throughout the writing of this paper.

allowing English-type full wh-movement, other languages, e.g. German and Hungarian, allow the wh-word to move to the specifier of a CP at an intermediate position between the base position of the wh-word and the location from which the wh-word takes scope.

- (2) a. *Was* glaubst du wen sie gesehen hat?
 WHAT think-2SG you who-ACC she seen have-3SG
 ‘Who do you think she saw?’
 b. *Was* glaubst du wen sie gesehen hat _____?
- (3) a. *Wen* glaubst du dass sie gesehen hat?
 who-ACC think-2SG you that she seen have-3SG
 ‘Who do you think she saw?’
 b. *Wen* glaubst du dass sie gesehen hat _____?

In (2), we see that the German wh-word *wen* does not occupy its scope position.¹ If we consider long wh-movement to be a series of shorter, more local movements (successive-cyclicity), then, the wh-word, *wen*, has only completed a certain number of these local movements. In other words, it has only moved partially. Furthermore, the matrix wh-scope position is occupied by a semantically empty wh-word, *was*, which we will refer to as a ‘wh-expletive’. This wh-expletive represents the position from which the full wh-word takes its semantic scope. Additionally, the set of examples below demonstrates that this wh-expletive is inserted not only in the SpecCP of the wh-scope position, but also in every intermediate SpecCP between the partially moved wh-phrase and its matrix scope position:

- (4) a. **Wen** denkst du dass sie glaubt dass Fritz meint dass sie liebt?
 who think you that she believes that Fritz means that she loves
 b. *Was* denkst du **wen** sie glaubt dass Fritz meint dass sie liebt?
 WHAT think you who she believes that Fritz means that she loves
 c. *Was* denkst du *was* sie glaubt **wen** Fritz meint dass sie liebt?
 WHAT think you WHAT she believes who Fritz means that she loves
 d. *Was* denkst du *was* sie glaubt *was* Fritz meint **wen** sie liebt?
 WHAT think you WHAT she believes WHAT Fritz means who she loves
 e. **Was* denkst du dass sie glaubt *was* Fritz meint **wen** sie liebt?
 WHAT think you that she believes WHAT Fritz means who she loves
 f. **Was* denkst du dass sie glaubt dass Fritz meint **wen** sie liebt?
 WHAT think you that she believes that Fritz means who she loves
 ‘Who do you think that she believes that Fritz means that she loves?’

(Fanselow *in press*)

¹ It must be noted that this example is not merely two questions strung together (i.e., ‘What do you think? Who did you see?’). Evidence for this can be seen in the fact that German, a V2 language, is verb-second in matrix clauses, but it has verb-final order in subordinate clauses. For example, if (2) above were two separate constructions, it would have the form *Was glaubst du? Wen hat sie gesehen?* Therefore, (2) is a single matrix-subordinate construction, given the relative orderings of the verbs.

This pattern suggests that during the successive derivation of these interrogatives, movement of the contentful *wh*-phrase to the next highest specifier of CP is somehow optional. The *wh*-phrase may move to any intervening SpecCP in the derivation. When the *wh*-phrase moves only partially, but not completely, expletives are inserted at each remaining SpecCP level in the projected path of possible movement of the *wh*-phrase. Given that the full *wh*-phrase does not occupy its scope position, the question of locality constraints on the interpretability of *wh*-scope becomes crucial. It seems evident that the insertion of *wh*-expletives is a scope-marking strategy used to overcome these constraints, since the *wh*-phrase now becomes interpretable from a wider scope position than its surface location. It is not evident, however, what the mechanics underlying this strategy are.

There are two major issues to be dealt with in the analysis of partial *wh*-movement constructions, both of which are inextricably related: (i) the syntactic operations that allow for this scope-marking strategy to occur in the first place, and (ii) the semantic interpretability of the *wh*-scope that results from these syntactic operations. We begin by attempting to resolve the first issue, as it will guide our later discussion of possible interpretability frameworks for these constructions. In the following section, I hope to show that partial *wh*-movement constructions help to support a modified version of Chomsky's (2000, 2001a) proposal that successive-cyclic movement is made possible by the existence, or addition, of certain movement-triggering features on subordinate functional heads. That is to say, every local movement during a derivation must be locally motivated, as opposed to the idea that long successive movement may be motivated by non-local heads (Chomsky 1991). Given that feature-based approaches often vary in their assumptions, we start with a preliminary sketch of the theoretical framework we are using.

2. THE MINIMALIST PROGRAM

The goal of the Minimalist Program is to strip linguistic analysis of much of the over-inflated machinery often used to describe observable phenomena in language. Following Chomsky (1995), all syntactic operations are driven by the requirement that certain features of language need to be checked by the Phonological Form (PF or Spell-Out) level and the Logical Form (LF or interpretative) level. These are the only two interface levels of language. Language is thus a computational system that merely solves this requirement in an optimal way.

The core component of the Minimalist Program is 'feature-driven analysis'. Constituents either Merge with other constituents to satisfy feature requirements, or Move to meet those requirements. Therefore, all movement in language can be accounted for by the need to check features. For instance, data that are observable at the PF level of language are attributed to the requirement that the computational component check all strong uninterpretable features before Spell-Out. Under Chomsky (2001b), strong uninterpretable features are actually unvalued features that must receive a PF-value before being sent to Spell-Out. Weak uninterpretable features must be given a value by LF. Interpretable features are, by definition, those which do not require checking at any of the interface levels, since they are already valued, but may still take part in feature-checking operations. Checking of features occurs when an uninterpretable/unvalued feature is assigned an abstract value through agreement with a proximal similar feature. Under this analysis, overt *wh*-movement has been viewed as the need to check strong uninterpretable *wh*-features, although whether

these features are found on complementizers, the wh-phrases themselves, or both has been debated. In the present analysis, we take the view that wh-movement is due to strong uninterpretable wh-features on complementizers (or, as we will soon see, phasal heads). Thus, all wh-movement is due to an upwards AttractF function motivated by a head's need to check its strong uninterpretable wh-feature. This is the Last Resort condition of Chomsky (1993), which claims that all movement is due to uninterpretable features on the attracting head.

Cheng (1997) offers a preliminary attempt to fit partial wh-movement into this Minimalist feature-driven framework. According to the model presented, the full wh-phrase undergoes a process of 'feature separation' in which the wh-feature is removed from the lexical wh-phrase, and thus itself becomes a valid target for movement operations. Subsequently, under a copy theory of movement in which all moved elements and traces are merely copies of the same constituent (Chomsky 1993), the wh-feature is copied into each intervening specifier of CP. Cheng suggests that the wh-feature is first separated from the full wh-phrase, and then copied and moved, afterwards scattered throughout the intervening CP specifiers. Therefore, multiple instances, or copies, of the wh-feature are left throughout the derivation. The wh-feature of the wh-phrase is first pulled out of that wh-phrase from its in situ position, and then copied and moved to all remaining CP specifiers, in order to satisfy the matrix complementizer's strong uninterpretable wh-feature. Additionally, a copy of the moved wh-feature is left behind in the intermediate C, and the wh-phrase, having lost its wh-feature, is moved to the intermediate SpecCP. This distribution of the wh-feature and the wh-phrase in the intermediate CP is necessary for an LF repair strategy that rejoins the stray wh-feature to the contentful wh-phrase, in order to provide the correct semantic interpretation. This gives the following schema for partial wh-movement:

- (5) $[_{CP1} [FF] \dots [_{CP2} [FF] \dots [_{CP3} \textit{wh-phrase} [FF] \dots [_{IP} \dots$
 copy copy

Under this view, the wh-expletives we hear at Spell-out are simply the phonological realizations of the scattered wh-features. As we can see in the German example below, the languages that allow this copy and move process with wh-features at the PF level have a default wh-word which is used to spell out those features, in this case, *was*:

- (6) a. *syntactic derivation*
 $[_{CP} [FF] \textit{glaubt} [_{IP} \textit{Hans} [_{CP} \textit{wen} [_{C} t_{[FF]}] [_{IP} \textit{Jakob} t_{\textit{WEN}} \textit{anruft}]]]]]]$
 b. *phonological realization*
 $[_{CP} \textit{was}_i \textit{glaubt} [_{IP} \textit{Hans} [_{CP} \textit{wen}_i \quad \quad \quad [_{IP} \textit{Jakob} t_i \textit{anruft}]]]]]]$
 WHAT think Hans whom Jakob is.calling
 ‘Whom does Hans think that Jakob is calling?’

This analysis raises a few questions. For one, under a traditional view of the copy theory of movement, only one copy is generally spelled out at the PF interface (Hornstein 1999). In the model presented in Cheng (1997), all copies of the scattered features are realized phonologically. More important, however, is the fact that movement of the contentful wh-phrase to an intermediate CP specifier 'after' separation from its wh-feature violates the Last Resort condition on movement; the wh-phrase does not move to check any

uninterpretable feature on an attracting head, but instead moves for imprecise reasons of LF interpretability. Additionally, movement of the in situ wh-phrase after separation of its wh-feature seems inconsistent with generally accepted ideas of movement, since the same constituent is targeted once for movement of just its wh-feature, and then later targeted again for movement of its remaining features to a separate landing site. This seems to be an unnecessary step, and not in keeping with Minimalist ideals of economy. Additionally, Cheng's claim that the contentful wh-phrase moves minimally to the closest SpecCP after feature separation is incompatible with the substantiated data, since the wh-phrase may move to any intervening specifier of CP (see (4)). Lastly, the motivations for separation of the wh-feature from the wh-phrase at PF seem nebulous, as feature separation is normally reserved for operations at LF. Indeed, if feature separation were allowed at the PF level, there would be little motivation for overt movement of lexical constituents, since features themselves could be targets for overt movement to satisfy other strong unvalued features. Therefore, this type of analysis can be problematic.

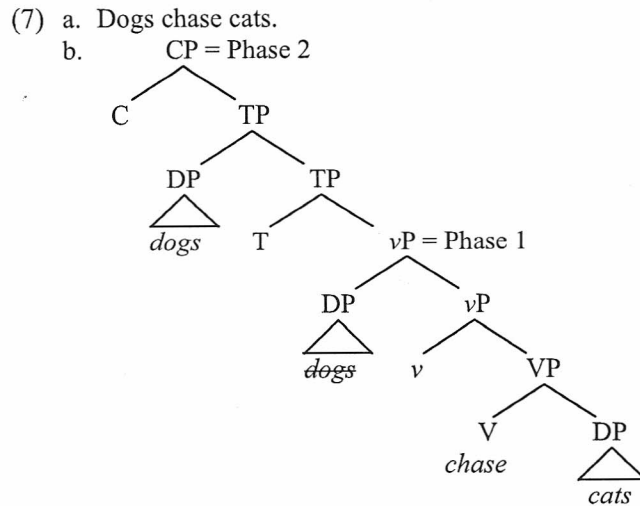
From these and previous observations on partial wh-movement, we can draw a few rough preliminary conclusions. First, if only one copy of an element may be spelled out at PF, we can assume that each phonological realization of a wh-expletive in a derivation is motivated by a separate and discrete uninterpretable feature. Second, given the successive-cyclic nature of wh-expletive insertion, we may make the obvious assumption that partial wh-movement adheres to strict locality conditions. Lastly, it is unlikely that the wh-feature is separated from the wh-phrase during the derivation, since feature separation does not normally occur at the PF level.

An advance in Minimalist analysis which postdates Cheng's accounts, namely 'Derivation by Phase' (see Chomsky 2001a), will help lead us to a more compelling interpretation of partial wh-movement constructions. The notion of phases allows us to break down the computation of language into smaller, more manageable units. In what follows, I show that understanding how these units function and interrelate is the key to deciphering the system underlying partial wh-movement.

3. DERIVATION BY PHASE

The notion of phases developed in Chomsky (2000, 2001a) limits the amount of information available to the computational component of language at each given step of the derivation. A phase is a syntactic 'chunk' that, once processed, is only marginally available to the rest of the derivation, and only for a short period of time. In our discussion of phases, we see that derivation by phase imposes strict limitations on locality in movement operations, and thus also helps us to better account for the successive-cyclicality evident in many syntactic transformations.

Phases are complete cycles within the derivation. That is to say, each phase is in itself one self-contained unit. Entire sentential derivations consist of multiple phases. Chomsky posits two functional heads as phase boundary markers: C (finite complementizer), and v (the transitive light verb). The following simple transitive sentence contains two phases, because it contains two phase heads (C and v):



According to Chomsky, because (7a) contains two phases, it is built in two stages, or cycles. First, the νP phase is built, which involves the selection of constituents from the Lexical Array; syntactic operations then take place; and, finally, the phase is sent to the PF component of language. Next, the CP phase undergoes the same order of operations. Note that the CP phase must somehow be able to access the νP phase during its own derivation, since it has moved the subject from its νP -internal position to SpecTP. We must therefore make the crucial observation that two contingent phases may exist in the computational workspace at once (Svenonius 2001). From the tangible limitations on successive-cyclicity, we can conclude that no more than two phases may simultaneously coexist. Additionally, only elements situated at the left edge of the next lowest phase are available for movement to the higher phase. That is to say, only the phase head and anything within the specifier of the phase head may move to the next highest phase; elements that are embedded lower in the phase are not viable candidates for movement operations (Phase Impenetrability Condition, or PIC). Since the subject *dogs* is found at the left edge of the νP phase (i.e. Spec νP) during the derivation of the higher CP phase, it may participate in movement operations within the CP phase. It raises to SpecTP to satisfy the strong EPP feature on T.

Given the observable successive-cyclic movement often found in the specifiers of CP, such as in *wh*-movement constructions, it is easy to believe that C is a boundary for phasal development. For example, successive movement of a *wh*-phrase through intervening specifiers of CP changes the finite Irish complementizer *go* to *aL*:²

² In (8), inflected forms of *go* is glossed as GO_c , and *aL* as aL_c .

- (8) a. Deir said gu-r ól said an tuisce.
 say they GO_C-PAST drank they the water
 ‘They said that they drank the water.’
 b. Cé a dúradh léithi a cheannódh é?
 who a_{LC} was.said with.her a_{LC} would.buy it
 ‘Who was she told would buy it?’ (McCloskey 2001)

This morphosyntactic effect on Irish complementizers is a clear indicator of successive-cyclic movement through SpecCP. However, proof of successive-cyclic movement through the edge of ν P is much less apparent. Nevertheless, several languages, such as Chamorro, exhibit altered morphology on verbs in wh-extraction constructions:

- (9) Hafa sinangani hao ni chi’lu-mu malago’-ña?
 what WH.was.told you OBL sibling-AGR WH.want-AGR
 ‘What did your sister tell you that she wants?’ (Chung 1998)

The wh-morphology found on the verb in Chamorro is presumably due to the movement of the wh-phrase through the left edge of ν P. As it passes through Spec ν P, it shares its wh-features with the verb, similar to the way in which Irish complementizers share the features of the wh-phrases moved through their specifiers. Because of these facts, we may comfortably assume that both CP and ν P constitute phase cycle boundaries under this analysis (see Svenonius 2001).

The limitations imposed by phases drastically narrow the search space for the checking of uninterpretable features, creating new concerns for issues of locality and its related Subjacency effects. Under the view of the successive construction of phases which we are adopting, the notion of locality is essentially derivational, rather than representational. The locality of operations is determined by the cyclic nature of phases, since a constituent’s availability for movement operations is determined by its position in the phase during certain points of the derivation. Constraints on movement, such as Subjacency, are therefore constraints on derivational processes, and not surface representations. Because of this, many so-called ‘barriers’ to movement can be recast as limitations set by these strong phase heads.

Furthermore, phasal limitations lessen the computational burden on the language faculty by confining the amount of information that must be concurrently available during each stage of the derivation. The assumptions made in the proposal of phases thus help to promote the spirit of Minimalist ideals of linguistic analysis by further revealing the optimal nature of language production. In what follows, I will show that a phasal analysis of partial wh-movement provides the most optimal interpretation of these constructions.

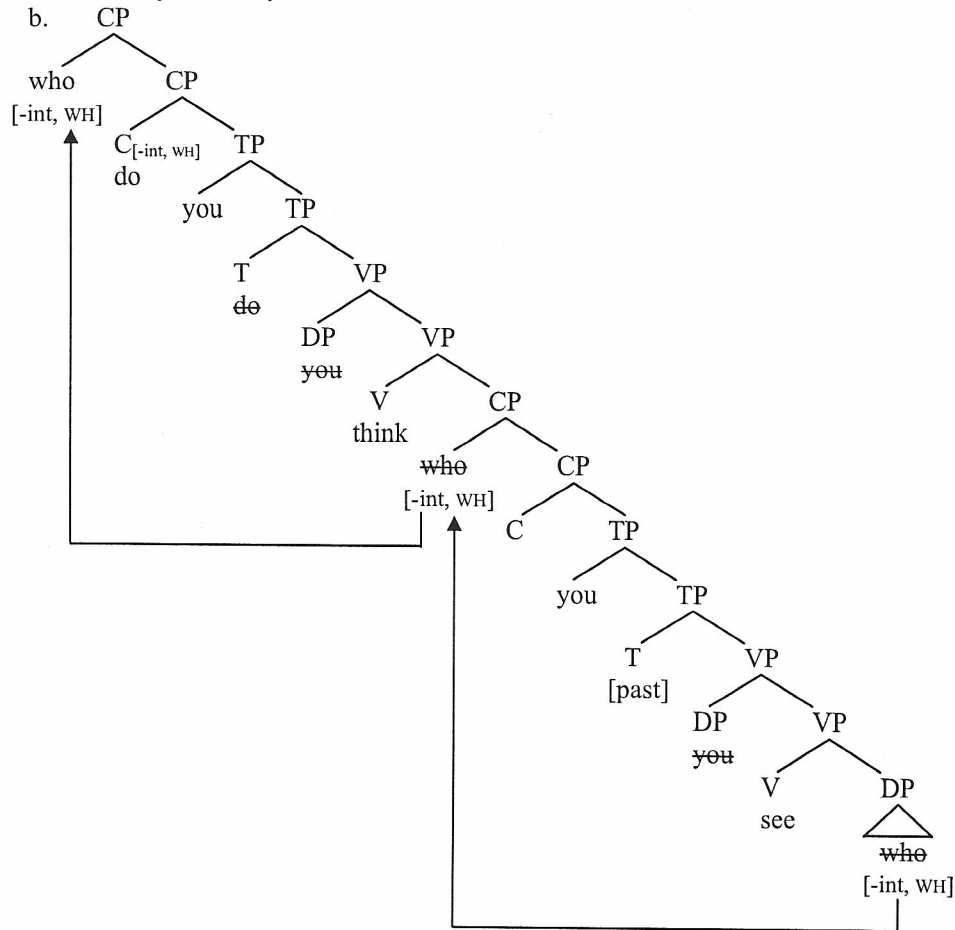
4. PHASES AND MOVEMENT

Under an analysis based in derivation by phases, all successive-cyclic operations necessarily involve iterative movement to the left edge of each individual phase. Since each phase must be syntactically complete (i.e., all uninterpretable features must be checked before completion of the phase) and all movement must be accounted for phase-internally, movement to the left edge of a phase throughout the derivation is driven by the featural makeup of the strong phase heads C and ν , which are both functional projections of language.

This means that all A-bar movement processes occur in order to satisfy strong uninterpretable features on C and/or ν (Chomsky 2001a).

In the case of full wh-movement, wh-phrases have traditionally been thought to move in order to satisfy a strong uninterpretable ($[-int]$) wh-feature on the matrix C, leaving successive traces in the intervening specifiers in order not to violate locality/Subjacency constraints. That is to say, the wh-phrase, which also was thought to contain an uninterpretable wh-feature, moves in order to check the matrix complementizer's uninterpretable wh-feature. Upon movement to the matrix SpecCP, the uninterpretable wh-features of both the null matrix complementizer and the wh-phrase are checked and deleted, satisfying Full Interpretation (i.e. deleting all strong uninterpretable features from the derivation before Spell-out). We would therefore have the derivation (10b) for (10a):³

(10) a. Who do you think you saw?



³ ν P was not considered a barrier for locality operations under previous accounts, so it has been omitted.

In the derivation above, the only head with an uninterpretable wh-feature is the matrix complementizer. Therefore, according to Last Resort, movement of the wh-phrase is not triggered until this head is inserted into the derivation. This scenario does not work under a phasal analysis of syntactic derivation, for several reasons. First, if we assume that the wh-phrase contains an uninterpretable wh-feature, and that it is left in situ until motivated to move by the matrix complementizer, the phase containing the wh-phrase is presumably sent to PF while still containing an uninterpretable wh-feature. This is contra the condition that phases not contain any uninterpretable features when they are delivered to the PF component (Chomsky 2001a). More importantly, the Phase Impenetrability Condition disallows access to the wh-phrase at the point of insertion of the matrix complementizer, since the wh-phrase is too deeply embedded in a lower phase, and thus unavailable for movement operations.

Given Last Resort and the Phase Impenetrability Condition, we must assume that wh-phrases in full wh-movement constructions move cyclically to left edge of each phase ‘throughout the entire course of the derivation’, and that this movement is somehow motivated by the strong phase heads *v* and *C*. Since in the past overt wh-movement has been presumed to occur in order to satisfy strong uninterpretable wh-features, we initially posit that all strong phase heads within the path of wh-movement must also contain strong uninterpretable wh-features. Such intermediate features have been termed ‘movement-triggering’ by Chomsky (2001a), or ‘pseudo-features’ by others (e.g. McCloskey 2001). Thus, movement of the wh-phrase to the left edge of each successive phase is motivated by these movement-triggering features. The existence of such features within the derivation has been controversial, since it has been argued that they do not satisfy any lexical requirements, nor do they contribute to the interpretation of the construction (Felser 2003). However, partial wh-movement constructions support the presence of these intermediate features in the derivation, and suggest that they do indeed contribute to the interpretability of wh-scope. That is to say, there are intermediate features that trigger movement which exist for reasons other than solely triggering movement. For example, as we explain in more detail in following sections, the presence of multiple overt wh-expletives distributed successive-cyclically within the wh-scope of the sentence indicates the probable existence of some sort of intermediate wh-features.

The presence of strong uninterpretable features on phase heads raises a further question regarding the interpretability of the wh-feature of the wh-phrase. If this feature is uninterpretable, it would be deleted upon checking the uninterpretable wh-feature on the lowest phase head, since uninterpretable features, by definition, do not survive checking operations (Chomsky 1995). If this were the situation, wh-phrases would never be able to move beyond the left edge of the phase in which they are generated, as they would lose their wh-feature upon the first checking operation, and would become inert and thus immovable (the prefix *u* indicates a feature that is uninterpretable):

- (11) a. *did you say that she who saw?
 b. *_[CP2] [_C did] you _[VP2] [_v say] _[CP1] [_C that] she _[VP1] who _[v] saw ~~who~~]]]
 [uwh] [uwh] [uwh] ~~[#wh]~~ ~~[#wh]~~ [uwh]

However, if we assume that the wh-feature on the wh-phrase is interpretable, it will survive the checking process, and therefore is available to check further uninterpretable wh-features

in the derivation (Groat 1999). Note that this is a necessary modification to Chomsky's (1995) initial assumption that movement is induced only to check uninterpretable features on both the attracting head (the probe) and the attractee (the goal). Nevertheless, if we accept that each iterative movement of a phrase is feature-driven phase-internally, the conclusion that certain features on the goal must survive the checking process is naturally borne out, since the goal must be able to check multiple features.⁴ Therefore, in (12b), we see that as the *wh*-phrase moves successively through the phases, it deletes the uninterpretable *wh*-features of the phase heads, but retains its interpretable *wh*-feature (the prefix *i* indicates a feature that is interpretable):

- (12) a. Who did you say that she saw?
 b. [_{CP2} Who [_C did] you [_{VP2} ~~who~~ [_V say]
 [*iwh*] [~~#wh~~] [*iwh*] [~~#wh~~]
 [_{CP1} ~~who~~ [_C that] she [_{VP1} ~~who~~ [_V saw] ~~who~~]]]
 [*iwh*] [~~#wh~~] [*iwh*] [~~#wh~~] [*iwh*]

Under this analysis, a partially-moved *wh*-phrase would not check the uninterpretable *wh*-features on any strong phase heads higher than its surface position:

- (13) a. *Glaubt Hans wen Jakob anruft?
 think Hans who Jakob is.calling
 b. * [_{CP2} [_C Glaubt] Hans [_{VP2} [_V glaubt]
 [*iwh*] [~~#wh~~] [*iwh*]
 [_{CP1} wen [_C] Jakob [_{VP1} ~~wen~~ [_V anruft] ~~wen~~]]]
 [*iwh*] [~~#wh~~] [*iwh*] [~~#wh~~] [*iwh*]

In the construction above, the uninterpretable *wh*-features on the heads of both CP2 and vP2 are left unchecked, causing the derivation to crash at PF. However, the rescue mechanism of *wh*-expletive-insertion is available in German, giving us the following tentative structure:

- (14) a. Was glaubt Hans wen Jakob anruft?
 WHAT think Hans who Jakob is.calling
 b. [_{CP2} Was [_C glaubt] Hans [_{VP2} was [_V glaubt]
 [*iwh*] [~~#wh~~] [*iwh*] [~~#wh~~]
 [_{CP1} wen [_C] Jakob [_{VP1} ~~wen~~ [_V anruft] ~~wen~~]]]
 [*iwh*] [~~#wh~~] [*iwh*] [~~#wh~~] [*iwh*]

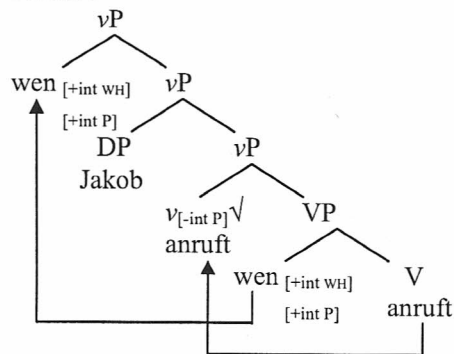
Let us assume that the *wh*-expletive *was* is inserted into SpecvP in order to check the features presumably found on *v*, and then moved to SpecCP to satisfy the complementizer's strong uninterpretable *wh*-feature. For now, we will work under the assumption that movement of full *wh*-phrases to SpecvP is simply optional in languages that allow partial *wh*-movement

⁴ Note that an alternative view may posit that a goal could contain a 'certain number' of uninterpretable features to delete in checking operations, and once it has run out of these features it is no longer available for movement. I believe this view to be less satisfying, however, since it requires that multiple instances of the same feature appear on a single constituent, and thus greatly increases the featural complexity of the goal.

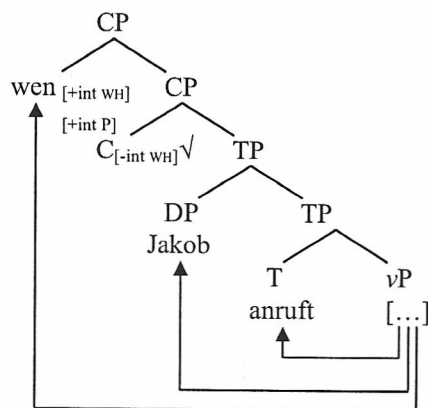
partial wh-movement in which full movement occurs when P-features are added to the head of all intermediate ν P phases, and partial movement occurs when the P-features are ‘not’ added to ν . Under this model, the full wh-phrase would not move to Spec ν P from its embedded SpecCP position when the next highest ν lacked P-features – there would be no motivation for its movement. Because the wh-phrase has not moved to the left edge of the next highest ν P phase, it will be unavailable for movement to the next highest CP phase. Therefore, it is unable to check the uninterpretable wh-feature of any remaining complementizers in the derivation. Wh-expletive-insertion would then occur in order to check these higher uninterpretable features. So, in this case, wh-expletives would be generated directly in SpecCP to satisfy the wh-feature of the complementizer, in addition to a likely EPP-feature, as well. The higher Spec ν Ps, lacking any relevant P-features, would not require insertion of an expletive (a check mark indicates that the uninterpretable feature has entered into a checking relationship):

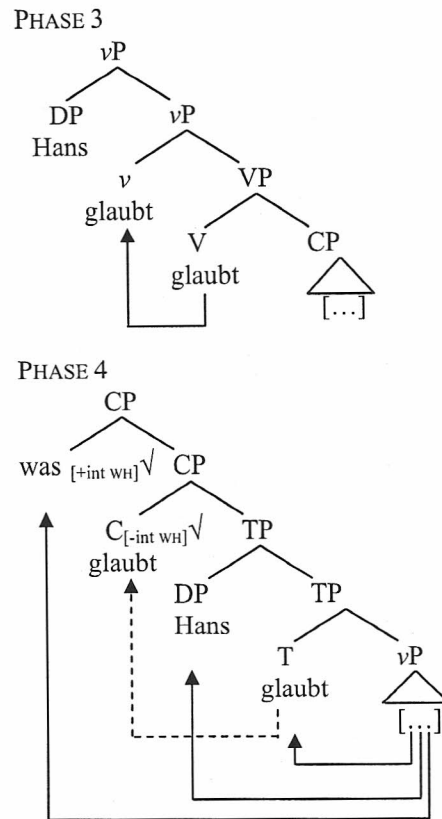
- (18) Was glaubt Hans wen Jakob anruft?

PHASE 1



PHASE 2





According to this version of partial wh-movement, during the derivation of Phase 1 in the above example, the wh-phrase *wen* moves to Spec v P to check the uninterpretable P-feature of v . Because of this, it is available for movement to SpecCP of Phase 2 to check the complementizer's uninterpretable wh-feature. In Phase 3, v does not have a P-feature, or, in other words, no P-feature has been optionally added to v . Because of this, the wh-phrase *wen* is left in its SpecCP position in Phase 2. During the derivation of Phase 4, the uninterpretable wh-feature on C must be checked, but *wen* has already been sent to Spell-Out at the completion of Phase 2. So, under this view, the wh-expletive, which contains only an uninterpretable wh-feature, is inserted into the derivation to meet this requirement.

While this analysis appears to be able to explain the observable data, it is nonetheless a somewhat dissatisfying account of partial wh-movement. The hypothesis that movement-triggering features may optionally be added to the left edge of a phase merely describes the evident successive-cyclic movement, rather than positing more empirically grounded motivations for movement to the left edge of a phase. On the other hand, given the apparent optional nature of partial wh-movement seen in example (4), we cannot completely discount Chomsky's proposal at this point in our discussion. Regardless, for the time being, we seek an alternative analysis for movement to the v P edge in interrogative constructions.

In order to proceed further with an analysis of intermediate movements in the phasal derivation of partial wh-movement constructions, we must temporarily put aside the notion of phases and look at the issue of semantic interpretability of the wh-expletives. The interpretability of partial wh-movement sentences has traditionally been explained in one of two ways: either as the result of a direct wh-dependency, in which the wh-expletives and the wh-phrase all form part of the same chain, or by an indirect wh-dependency, in which the wh-expletives are related to the entire embedded clause that contains the wh-phrase on the surface, rather than to the wh-phrase itself. By briefly examining these two approaches, I hope not only to show that these partial movement constructions constitute an indirect dependency, but also to demonstrate that this indirect dependency is due to the role *vP* plays in wh-expletive constructions.

5. INTERPRETABILITY AND WH-DEPENDENCIES

5.1 THE DIRECT WH-DEPENDENCY MODEL

Analyses of partial wh-movement as a direct wh-dependency (e.g. McDaniel 1989) stem from Chomsky's (1981) observation that long distance dependencies of wh-phrases are derived from movement chains formed by successive-cyclicity, i.e. that a wh-phrase undergoes cyclic movement through intervening specifiers of CP on the way to its LF wide scope position, leaving traces in each intermediate landing site. In (19a) below, the base, or thematic, position of *mit wem* is linked to its LF scope position by the A-bar-chain $\langle \textit{mit wem}, t_1, t_2 \rangle$:

- (19) a. [*Mit wem*]_i glaubt [_{IP} Hans [_{CP} *t*₁ dass [_{IP} Jakob jetzt *t*₂ spricht]]]?
 with who-DAT thinks Hans that Jakob now speaks
 b. *Was*_i glaubt [_{IP} Hans [_{CP} [*mit wem*]_i [_{IP} Jakob jetzt *t*₁ spricht]]]?
 WHAT thinks Hans with who-DAT Jakob now speaks
 ‘With whom does Hans think that Jakob is now talking?’

Under the direct wh-dependency approach, only the first link of the A-bar-chain in (19b) is formed by movement operations; the second link in the chain is formed by insertion of the scope-marking expletive directly into the specifier of the matrix CP: $\langle \textit{was}, \textit{mit wem}, t_1 \rangle$. The consequently distinct A-bar-chains formed in (19a) and (19b) are only different on the surface, as it is assumed that the wh-phrase continues its movement at LF, and eventually replaces the wh-expletive, which acts merely as a placeholder for the wh-phrase's scope. The wh-chain formed by partial movement shares the same wh-feature throughout by a process of feature absorption. In other words, each member of the chain is co-indexed in such a way that all members share the same features. Consequently, the interpretability of both the partial wh-movement chain and the full wh-movement chain is identical. In this way, the insertion of a wh-expletive is a rescue mechanism to maintain the proper scope of the partially-moved wh-phrase. A well-formed wh-chain is thus defined as containing a scope-marker (or multiple scope-markers), a contentful wh-phrase, and traces of that phrase, in that order. As we have seen, this correctly predicts that no wh-expletives may occur lower than the contentful wh-phrase, and, of course, no traces of the wh-phrase may appear higher than the wh-phrase itself.

In this regard, wh-chains superficially appear to be very similar to A-chains. That is to say, much like the way in which insertion of expletive *there* can act as an alternative to overt A-movement of an embedded argument, insertion of wh-expletives may be an alternative to complete overt A-bar movement of wh-phrases (Fanselow *in press*). However, there are crucial differences that this view leaves unresolved. For instance, in A-movement, the associate of the expletive is incapable of movement:

- (20) a. There_i seems to be a man_i in the room.
 b. *There_i seems a man_i to be t_i in the room.

The contentful wh-phrase, which is considered to be bound by the wh-expletive, is required to move from its base position in partial wh-movement constructions. Specifically, the contentful wh-phrase must move from its base position to a specifier of CP, and may optionally move to higher specifiers of CP. Additionally, it has been argued that the expletive *there* is not directly merged into the specifier of TP to satisfy an EPP requirement, but rather is base-generated in a small clause with its associate DP, and then moves to satisfy the strong EPP feature on T, giving the following general structure:

- (21) [_{TP} there [_T is [_{SC} [_{DP} a problem] t_{there}]]] (Groat 1999)

Wh-expletives, on the other hand, are presumed to be base-generated directly in their SpecCP surface positions under a direct dependency approach. Also, unlike expletive *there*, wh-expletives are seemingly unable to move out of their clause, requiring instead the insertion of a separate expletive at each consecutively higher SpecCP level. This need for multiple iterated wh-expletives, rather than generating a single expletive and moving it to matrix wh-scope position, is not fully addressed in this account. Taking into consideration these differences, we cannot liken A-movement expletive constructions to A-bar wh-expletive constructions if we accept a direct dependency analysis. While a direct wh-dependency view provides a rough model of the semantic interpretability of partial wh-movement, it lacks a sufficient explanation of the syntactic motivations behind this phenomenon.

The direct wh-dependency analysis of partial wh-movement has found a wide range of both support and criticism. Much of the criticism stems from the observation that wh-expletives share more similarities with the embedded complementizer clauses that house the partially-moved wh-phrase, rather than with the phrase itself. This goes against a direct wh-chain relationship between the wh-expletives and the wh-phrase. In the following section, I review the indirect wh-dependency proposal, which discounts the existence of such a wh-chain, and which additionally supports an analysis much more similar to the theory of *there*-type expletives.

5.2 THE INDIRECT WH-DEPENDENCY MODEL

A variety of propositions have been made under the indirect wh-dependency approach, many of which differ in their analyses of the role and behavior of wh-features. The account set forth in Horvath (1997) hinges upon a process of feature percolation, similar to the argument put forth independently in Cheng (1997) for feature separation. Horvath proposes that after the wh-phrase undergoes movement to its surface position in the SpecCP of a lower clause, the

wh-feature is separated from the wh-phrase, and continues the successive path of movement to the matrix SpecCP (see Pesetsky 2000: 67-8). So, in other words, once partial movement of the full wh-phrase is complete, the wh-feature leaves the phrase and percolates up the derivation, unlike in Cheng's analysis where the wh-feature separates from the wh-phrase before partial movement occurs. The percolation of the wh-feature after partial movement itself motivates the insertion of wh-expletives. As the feature moves from SpecCP to SpecCP throughout the derivation, it cannot stand on its own, and so requires the insertion of an expletive. This is again somewhat unlike Cheng's account, in that the expletive we hear on the surface is not simply a phonological realization of a stray feature, but rather an expletive inserted to support that feature.

The assumption that the wh-feature separates from the wh-phrase after it has moved partially to the embedded SpecCP is crucial to Horvath's analysis, and lends support to the indirect wh-dependency explanation of these constructions, as the leftmost position within the CP takes on a distinct prominence in the expletive-associate relationship. Horvath (1997) uses the overt variance of the Case of Hungarian wh-expletives to illustrate that the expletives are linked not to the full wh-phrases themselves, but to the subordinate CPs that contain them. The following examples illustrate this point:

- (22) a. **Mit** mondtál, hogy **kinek** vett János színházjegyet?
 WHAT-ACC said-SG-indef.DO that who-DAT bought John-NOM ticket-ACC
 'What did you say for whom John bought a theatre-ticket?'
 b. **Mire** számíatsz, hogy **melyik fiúval** fog Mari beszélni?
 WHAT-AL count-2SG that which boy-with will Mary-NOM speak-inf
 Lit. 'On what do you count with which boy Mary will speak?'
 'What do you expect with which boy Mary will speak?' (Horvath 1997: 527)

These examples show that there is no inherent or default Case for Hungarian wh-expletives. Rather, they must inherit their Case by other means. This evidence also argues strongly against the direct wh-dependency analysis. (22a) shows that the wh-expletive and the wh-phrase may have different Case agreement features. If these two constituents were members of the same A-bar chain, the wh-expletive would presumably inherit its Case from the wh-phrase, due to the absorption of features throughout the wh-chain, à la McDaniel. So, we must ask what determines the Case of the wh-expletive.

Horvath observes that the Case of the expletive is directly related to the relationship between the matrix clause and the CP containing the wh-phrase. For example, when the complement clause is a direct object of the matrix verb, we find accusative Case on the expletive. Because of this Case concord, we can see that the expletive receives its Case based on the embedded CP's relationship with the immediately higher verb. From this data, we may infer that under this type of feature percolation model, the point at which the wh-phrase has completed its partial movement and is separated from its wh-feature is also the point at which the Case features of the expletive are determined. Its location at the most dominant position in the embedded CP means that the particular Case assigned is that of the embedded CP in relation to the clause that dominates it.⁷ However, the exact manner in which Case is

⁷ The Case of the German wh-expletive *was* is invisible, as its form is invariable across Case declensions.

transferred from the embedded CP to the wh-expletive is not sufficiently explained by this system.

In terms of semantic interpretability, Horvath claims that the entire CP associated with the expletive (the CP-associate) moves successive-cyclically to replace the wh-expletives at LF, eventually stopping in the wh-scope position. It is proposed that it is this type of LF association between the wh-expletives and the embedded CP that determines the Case of the wh-expletives. While this explanation may suffice, it goes against the assumption that associate relationships must be established locally. Indeed, we will soon see that the relationship between the expletive and its CP-associate can be considered much closer than this LF reconstruction. Regardless, since the wh-expletive receives its Case from the entire CP-associate, and not the wh-phrase itself, we can now see some of the advantages of the indirect wh-dependency approach over the direct wh-dependency account. The successive derivation of Horvath's model could easily be integrated into a phasal analysis. However, similar to Cheng's (1997) argument, motivation for the separation of the wh-feature from the wh-phrase at the PF level is not fully explained. Additionally, due to the close structural association between the embedded CP and the wh-expletive, we must assume that the expletive is generated not directly in matrix SpecCP, but in some position much closer to the CP-associate itself.

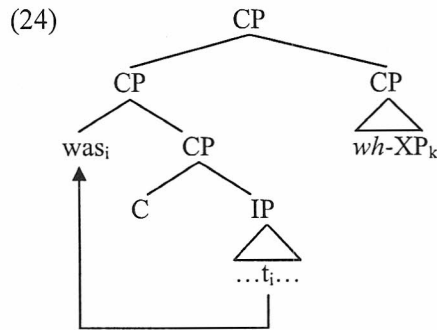
Under the indirect dependency view put forth by Dayal (1994), all features of the wh-phrase remain intact. Furthermore, the 'wh-expletive' of the direct dependency model is not an expletive at all, but instead a constituent wh-phrase generated in object position linked to a subordinate wh-complement clause. That is to say, the scope-marking wh-word (SWh) (e.g. *was*) is an argumental wh-phrase associated with the entire clause in which the partially moved wh-phrase is found, rather than only with the lower wh-phrase itself.⁸ Not coincidentally, the SWh is simply the standard wh-word used to refer to propositions. In other words, the SWh acts as a type of syntactic precursor to the lower interrogative clause. For example, in both of the following questions, the SWh *was* is essentially the same; the only difference being that in the second there is an overt subordinate phrase that is syntactically associated with it:

- (23) a. Was denkst du
 what think you
 'What do you think?'
 b. *Was* denkst du wer gekommen ist
 What think you who come is
 'Who do you think has come?' (Fanselow in press)

(23b) can thus be thought of as a monosentential counterpart to 'What do you think? Who has come?' However, instead of appearing as two separate sentences, the two clauses have been combined into one syntactic unit. Under this view, the fact that the SWh is the standard wh-word used to refer to propositions may help to explain why it often appears as the most general wh-word in a given language, since it merely refers to an interrogative proposition which later follows. Indeed, it has been observed that only questions that allow this

⁸ For the clarity's sake, I refer to the scope-marking wh-word as 'SWh' for the purposes of this part of the discussion, since it is not considered to be a wh-expletive under Dayal's account.

parenthetical-type interpretation allow partial wh-movement (Felser 2001). Dayal posits that this is due to the status of the embedded CP as an adjunct to the matrix CP:



However, from a syntactic point of view, this leaves the question of Case similarity between the SWh and the embedded CP unanswered.

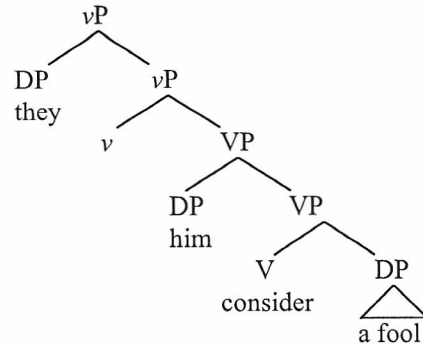
In order to devise a satisfactory model of partial wh-movement, we must account for Case variations syntactically, which requires establishing a structural relationship between the wh-expletive and the embedded CP. A crucial observation is that the embedded CP-associate of the wh-expletive is not an adjunct, but rather is a complement of V. The bound variable interpretation of *sie* 'she' in both examples below indicates that the embedded CP cannot be adjoined to the matrix CP, since it must necessarily be c-commanded by the quantified expression in both constructions:

- (25) a. **Wo** glaubt [jede Katze]_i dass sie_i die grössten Mäuse findet?
 where thinks every cat that she the largest mice finds
- b. **Was** glaubt [jede Katze]_i **wo** sie_i die grössten Mäuse findet?
 what thinks every cat where she the largest mice finds
 'Where does every cat think it will find the largest mice?' (Felser 2001)

If the embedded interrogative CP were adjoined to the matrix CP, *sie* would be outside of the c-command domain of *jede Katze* in (25b), and so could not be bound by this quantifier phrase. Given this strict condition on c-command, we must assume that the embedded CP is generated as a complement clause dominated by the matrix CP.

In order to gain a better understanding of how the Case of the wh-expletive and the embedded CP agree, let us briefly revisit the case of expletive *there* and the similar issue of small clause predication. It has been suggested that expletive *there* is base-generated in a small clause with its DP associate (see (21)). In certain types of small clause predication, such as (26), the verbal complement and the object argument share their Case and ϕ -features:

(26) They consider him a fool.



(Felser 2001)

The verbal complement *a fool* and the object *him* both share Accusative Case and third person singular agreement features. This is even more evident in the German example below, which visibly shows Case features:

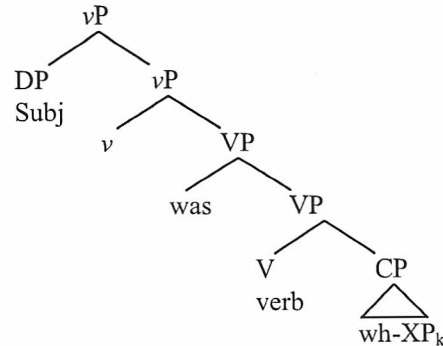
(27) Sie nannte ihn [einen Lügner]
 she called him_{ACC} [a liar]_{ACC}

Similarly, expletive *there* shares ϕ -features with its DP-associate. For example, in the following constructions, *there* checks its inherited singular and plural ϕ -features against the ϕ -features of T, respectively:

(28) a. [_{TP} there [_T is_{3SG} [_{SC} [_{DP} a problem]_{3SG} *t*_{there}]]]
 b. [_{TP} there [_T are_{3PL} [_{SC} [_{DP} problems]_{3PL} *t*_{there}]]] (Groat 1999)

We must now ask whether this ability of expletive *there* to share features with its DP-associate in small clause predications is similar to the feature-sharing between *wh*-expletives and their CP-associates. Taking into consideration the similar Case features of *wh*-expletives and their CP-associates, the answer appears to be yes, the only major difference being the type of clausal associate in each type of construction (i.e. DP- versus CP-associate). We therefore conclude that *wh*-expletives are generated in the following configuration:

(29) *base-generated wh-expletive small clause-type construction*



Similar to the manner in which expletive *there* inherits the features of its DP-associate, and in which *ihn* in (27) inherits the Case and ϕ -features of its DP-associate *einen Lügner*, the expletive, *was*, also inherits the features of its CP-associate (most importantly in this instance, Case) due to the configuration of the VP-shell. So, in the following Hungarian example, we can assume that, since the wh-expletive shares its Case with the associated CP, it is originally generated in a small clause-type construction with the complement CP, but has since moved to the matrix SpecCP to satisfy the strong uninterpretable wh-feature there:

- (30) M_i zavarta Marit, t_j [hogy kinek_i telefonáltál t_i]?
 WHAT-NOM disturbed Mary-ACC [that who-DAT phoned-2SG]
 ‘What disturbed Mary, who did you phone?’

In this way, movement of the wh-expletive from an A-position to a specifier position is unquestionably similar to the A-movement operations in constructions with expletive *there*. This is simply yet another advantage of this indirect wh-dependency model. That is to say, wh-expletives and expletive *there* both appear to carry features of their associates. Under the current analysis, we no longer have to posit direct Merge of these expletives into specifier positions, implying a vague LF feature-sharing relationship, but rather we understand that the expletives initially inherit these features from their associates in a local relationship, and then later move into specifier positions. This is in keeping with the logical assumption that feature concord must be established locally (see Felser 2001).

A few conclusions naturally fall out from the previous observations. First, the CP-associate of the wh-expletive is a complete, self-contained [+wh] CP, so, within the CP-associate itself, all normal wh-movement operations must occur. In other words, all wh-phrases within the embedded CP must therefore be fronted to the left edge of that CP in order to meet the phrase’s feature requirements, as we observe in the embedded CP in (30). This helps to explain why insertion of wh-expletives cannot license wh-in situ. In wh-in situ constructions, the strong uninterpretable wh-features of the CP-associate’s complementizers would remain unchecked if the wh-phrase did not move fully, as in the following general framework (note that wh-in situ final clauses in German still require verb-final syntax):

- (31) a. *Was denkst du dass Maria wen liebt?
 WHAT think you that Mary who loves
 ‘Who do you think that Mary loves?’
- b. *_[CP2] Was _[c] denkst] du _[vP2] was _[v] denkst was]
_[uwh] _[uwh] _[uwh] _[uwh]
_[CP1] _[c] dass] Maria _[vP1] wen _[v] liebt] ~~wen~~]]]]
_[uwh] _[iwh] _[iwh] _[iwh]

Additionally, the CP-associate of the wh-expletive may contain multiple embedded CPs, allowing for overt movement of the wh-phrase through multiple CP specifiers. (4b) is repeated and modified here:

- (4) b'. was denkt du [wen sie glaubt dass Fritz meint dass sie liebt]?
 WHAT think you [who she believes that Fritz means that she loves]
 ‘Who do you think that she believes that Fritz means that she loves?’

In (4b’), everything within the domain of the wh-phrase *wen* is also within the CP-associate of the wh-expletive *was*, meaning that the full wh-phrase has undergone multiple iterative movements to satisfy the intermediate uninterpretable features on the phase heads contained within the CP-associate. The ‘distance’ traveled by a contentful wh-phrase is thus determined by the establishment of an associate relationship between an embedded CP and a wh-expletive. At any point during the derivation of an interrogative, or, more specifically, after the completion of any CP phase in the derivation, an expletive may be inserted, and the resulting associate to the expletive is the entire CP that it dominates.

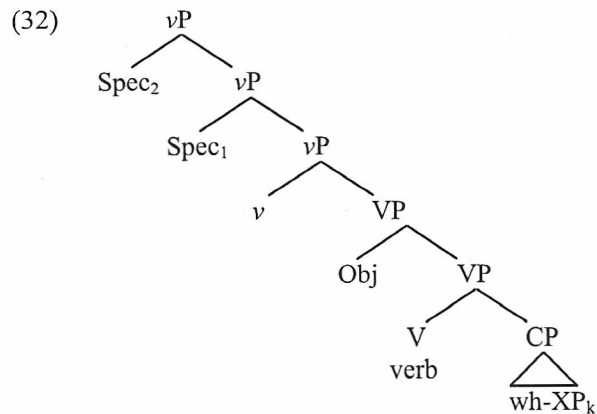
In this section, we have seen evidence from wh-expletive generation that supports a general indirect wh-dependency model. We have shown how the feature concord between the wh-expletive and its associate CP is established via a local operation in which the expletive is generated in object position within the VP-shell, and the CP-associate is the complement of the verb. Within the hierarchy of the VP-shell, these constitute two separate positions. In the following section, we turn once again to the theory of derivation by phase to illustrate the featural stimuli for movement of the wh-expletive through the phasal edges to the specifier of CP.

6. MOVEMENT OF WH-EXPLETIVES THROUGH THE LEFT EDGE OF vP

While we have argued that partial wh-movement is possible through the establishment of an indirect wh-dependency between the wh-expletive(s) and the CP-associate, the question of motivations for movement through the left edge of vP phases has been left open. In answering this question, we must deal with the following facts: (i) the wh-expletive must move from its base-generated object position to the specifier of vP in order to be available for later movement to the CP phase, and (ii) after the subsequent movement of the wh-expletive to SpecCP, and, as we argued earlier, the checking and deletion of the complementizer’s strong uninterpretable wh-feature, any remaining dominant vP phases must also generate a wh-expletive, rather than simply attract and raise the extant wh-expletive to their specifiers, as illustrated in example (4d), repeated below:

- (4) d. *was* denkt du *was* sie glaubt *was* Fritz meint **wen** sie liebt?
 WHAT think you WHAT she believes WHAT Fritz means **who** she loves
 'Who do you think that she believes that Fritz means that she loves?'

First, let us consider the motivations for moving the expletive to the left edge of ν P. Chomsky (1995) posits that the VP-shell itself, rather than dubious Agr projections, is responsible for Case assignment, in addition to several other aspects of agreement. For example, in the following VP-shell, there are two specifiers of ν P; Spec₁ for direct merge of the subject into the derivation, and Spec₂, to which the object is moved to check Case:



(cf. Chomsky 1995)

While the subject is merged from the numeration directly into a specifier of ν P, the object must raise there in a checking operation. As Chomsky indicates, checking relationships are established to check Case and ϕ -features. We have seen that *wh*-expletives exhibit objective Case, and so, we may initially assume that, like objects, they raise to Spec₂ of ν P simply to check Case. While Case-checking may be motivation enough for the movement of *wh*-expletives to the left edge of ν P, it is a somewhat unsatisfactory conclusion. If movement of the expletive to the left edge of ν P took place merely to satisfy Case agreement, we would be unable to explain why contentful *wh*-phrases, which do 'not' carry an objective Case, also move through the left edge of ν P in full *wh*-movement constructions. In our current analysis, we make the safe presupposition that the most optimal solution to this problem would offer the least amount of syntactic variance possible between the two types of *wh*-constructions. It is therefore necessary to ponder some other type of featural motivation for movement through ν P in *wh*-interrogatives.

In order to begin to make further conclusions regarding the exact motivations for movement to the left edge of ν P, let us look at another example of the effects of movement through the ν P phase. We have seen that the *wh*-expletive carries object agreement features. We additionally see in the following Hungarian example that the verb itself likewise shows features that agree with the object:

- (33) Mit tudnak/*tudják hogy melyik fiút
 what-ACC know-3PL-INDEF.DO/*know-3PL-DEF.DO that which boy-ACC
 szereted?
 like-2SG-DEF.DO
 ‘What do they know (INDEF) which boy you like (DEF)?’ (Horvath 1997)

Hungarian verbs inflect differently depending on the definiteness of their objects. Taking into account that, in the example above, the object of the verb, *tudnak* ‘know’, namely the wh-expletive *mit*, is indefinite, we would correctly predict that the verb would show the morphology appropriate for an indefinite object. Note further that the contentful wh-phrase *melyik fiút* ‘which boy’ is definite, according to the definite morphology of the verb *szereted* ‘like’. Again, we see here another case of agreement within the matrix CP not with the partially-moved wh-phrase, but with a constituent generated in the object position of the matrix verb. Somewhat similar to the previous Chamorro example, the observably distinct morphology on the Hungarian matrix verb indicates movement of a constituent through the left edge of the ν P phase. This is also similar to the changes in Irish complementizers mentioned earlier, in that a head is visibly altered due to the features of a constituent moved through its specifier. Since this type of effect is established only through a spec-head relationship, we may conclude that the wh-expletive shares its definiteness features with the verbal head during movement through Spec₂ of ν P. Therefore, the requirements of ϕ -features by verbal heads in interrogatives must be considered a probable candidate for the motivating force behind movement of wh-constituents through the left edge of ν P.

Chomsky (2001b) proposes that the nonsubstantive category ν may be optionally specified for a strong uninterpretable nominal feature.⁹ Given that wh-words are DPs, they necessarily also carry nominal features. After examining the successive-cyclic behavior of wh-phrases in full wh-movement, we may make the assumption that the optionality of this nominal feature on ν often, and perhaps in this case only, depends on the \pm wh-interrogative force of the sentence; in languages with overt wh-movement, ν heads within a phrase’s wh-scope will contain this strong uninterpretable nominal feature, whereas the light verbs in constructions that are not interrogative will not carry this feature.¹⁰ In this respect, the presence of a strong uninterpretable nominal feature on all ν heads in all interrogatives in wh-movement constructions differs from the already mentioned spurious addition of movement-triggering features, or P-features, suggested earlier by Chomsky. In other words, since all ν heads in interrogative wh-movement phrases contain an uninterpretable nominal feature, movement to the left edge of ν P in wh-interrogatives is not optional, but in fact compulsory in languages with overt wh-movement. A movement-triggering feature is not added to the derivation simply to force movement of a constituent; the feature that triggers movement is already present. Wh-words (either expletives or contentful wh-phrases) move to Spec₂ of ν P to check and delete this uninterpretable nominal feature on ν . This is in keeping with the Last Resort condition as we earlier defined it, since the impetus for movement is the attracting head, and not the moved constituent. Also, given the already mentioned visible ϕ -feature-related effects on verbs in both full wh-movement and partial wh-movement

⁹ This nominal feature is presumably akin to the EPP, or D-feature (see Chomsky 1995).

¹⁰ Note that it is also possible that light verbs in interrogative constructions in wh-in situ languages carry a weak version of this nominal feature.

constructions, nominal motivations for movement of wh-phrases to the specifier of ν P, rather than Case agreement motivations, are simply more empirically sound.

If we posit that wh-words move to the left edge of ν P to satisfy the ν head's strong uninterpretable nominal feature, we must still account for the fact that each wh-expletive moves from its base-generated object position to a specifier of ν P only once in a derivation with multiple wh-expletives, whereas wh-phrases move through multiple ν P specifiers. This issue is easily resolved. Identical to the difference between the specification of wh-features in wh-expletives and contentful wh-phrases, the nominal features of wh-expletives are uninterpretable, whereas the nominal features of full wh-phrases are interpretable, giving the following paradigm:

(34) *Featural Specifications of Wh-words*

Feature	Full wh-phrase	Wh-expletive
[nominal]	+Interpretable	-Interpretable
[wh]	+Interpretable	-Interpretable

In terms of feature value, the features of full wh-phrases are fully valued, meaning that they may stand on their own at PF. The features of expletives, on the other hand, are unvalued, and so must receive a value by PF through checking and deletion operations, or else the derivation will crash. Expletives are inherently 'weaker' elements, used merely to satisfy some syntactic need of other constituents. Therefore, the proposed symmetry in the featural specifications of wh-words is not surprising, since the contentfulness of full wh-phrases implies robust features, while the semantic emptiness of wh-expletives implies just the opposite.

The data naturally obtain from this distribution of features. In the following partial wh-movement example (from (13) above), we see that we can now justify every movement to a phase edge (i.e. ν P and CP) through a feature motivation that satisfies Chomsky's Last Resort condition:¹¹

- (35) a. Was glaubt Hans wen Jakob anruft?
 WHAT think Hans who Jakob is.calling
 'Who does Hans think Jakob is calling?'
- b. [_{CP2} Was [_C glaubt] Hans [_{VP2} was [_V glaubt was]
 [_{#wh}] [_{#wh}] [_{Uwh, #nom}] [_{#nom}] [_{Uwh, unom}]
 [_{CP1} wen [_C] Jakob [_{VP1} wen [_V anruft] wen]]]
 [_{iwh, inom}] [_{#wh}] [_{iwh, inom}] [_{#nom}] [_{iwh, inom}]

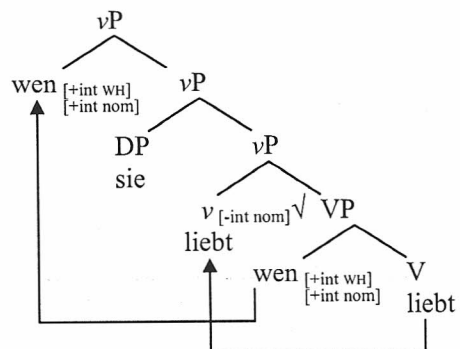
Because of the association of the embedded CP₁ with an expletive generated in object position of the matrix verb, the expletive becomes the closest phrase able to satisfy the matrix ν 's uninterpretable nominal feature (Attract Closest). Because of this, the contentful wh-phrase remains at the left edge of CP₁, even though its interpretable features would still allow it to participate actively in checking operations.

¹¹ While 'inom' indicates an interpretable nominal feature, 'unom' indicates an uninterpretable nominal-feature.

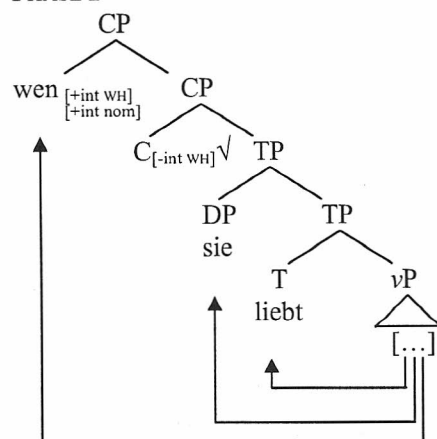
Now, let us take a phase-by-phase look at the more complex (4c):¹²

- (36) *was* denkst du *was* sie glaubt **wen** Fritz meint dass sie liebt?
 WHAT think you WHAT she believes **who** Fritz means that she loves
 ‘Who do you think that she believes that Fritz means that she loves?’

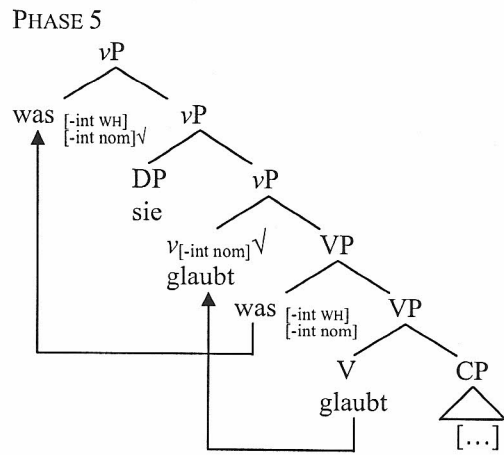
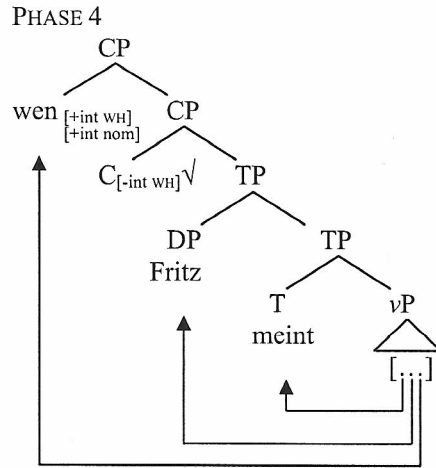
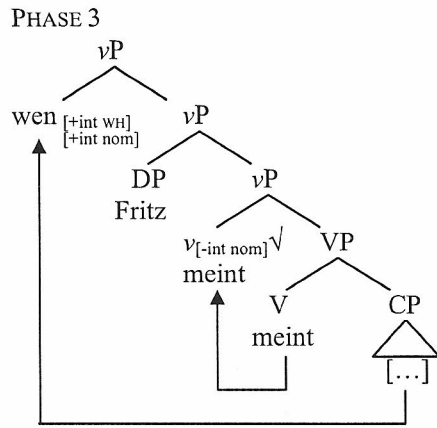
PHASE 1

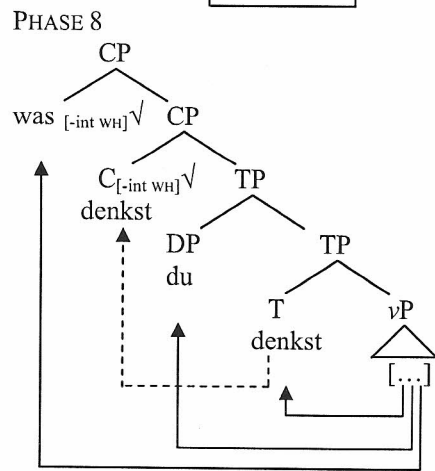
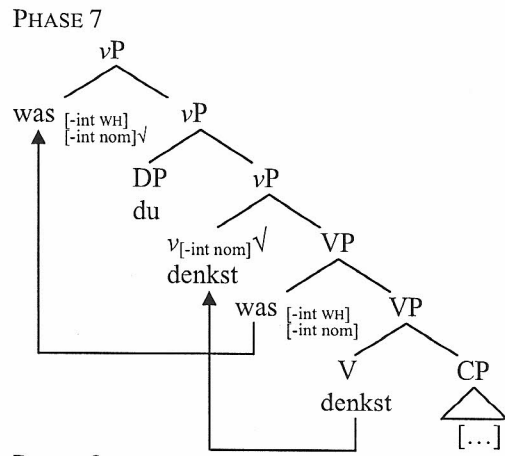
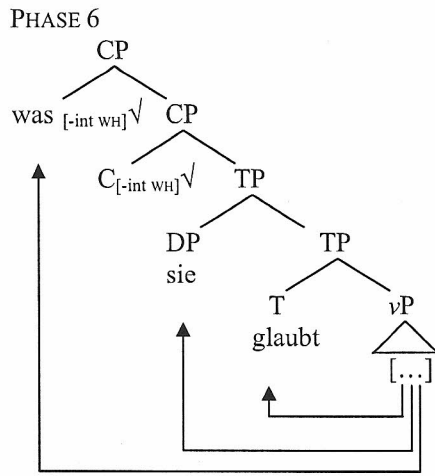


PHASE 2



¹² The overt complementizer *dass* is allowed where the uninterpretable wh-feature is deleted and the wh-phrase has been moved; also note that a checkmark again denotes a deleted feature.





In the derivation above, all constituents that leave a phase lie on the left edge of the phase; either the phase head itself moves, or a constituent in its specifier moves. Note that in Phase 5, a wh-expletive has been generated as the associate of the verb's CP complement. The light verb chooses this wh-expletive to satisfy its need for a nominal feature over the full wh-phrase on the left edge of Phase 4, because the wh-expletive is closer (i.e. for economy reasons). The generation of an expletive associated with a CP is therefore the most crucial element in determining where the full wh-phrase stops its movement in a partial wh-movement construction. Once the wh-expletive is generated and the association with the CP is made, the contentful wh-phrase ceases its movement.

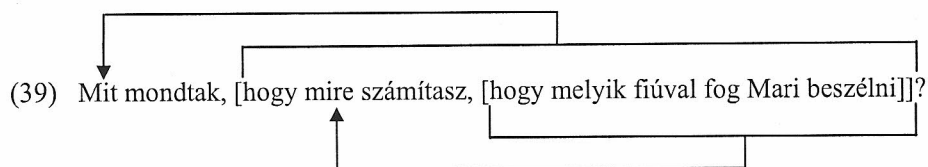
Furthermore, in the transition between Phase 6 and Phase 7, we notice that a new wh-expletive has been generated in object position. As in our earlier analysis of motivations for intermediate movements to C, we observe that since the uninterpretable nominal and wh-features of the original wh-expletive are deleted in Phases 5 and 6, respectively, the expletive is no longer capable of checking the uninterpretable features on the higher phase heads. Also, even though the features of the full wh-phrase are interpretable, and thus still intact, the phrase is contained in Phase 4, which has already been sent to the PF component by the time Phase 7 is constructed, and so cannot be targeted for movement. It follows that a construction like the one below crashes, since no expletive has been generated in the highest/matrix vP and no other constituent with a suitable wh-feature is available for movement to matrix SpecCP position:

- (37) *du denkst was sie glaubt **wen** Fritz meint dass sie liebt?
 you think WHAT she believes **who** Fritz means that she loves

Only if an expletive is generated in every vP phase higher than the CP-associate will the derivation converge. This raises the question: if there is more than one wh-expletive in a sentence, does each expletive have the same associate CP? The following example offers clear evidence that each wh-expletive does not have the same associate. (Source of (38) is my consultants.)

- (38) Mit mondtak, hogy mire számítasz, hogy melyik fiúval
 WHAT-ACC said-3PL that WHAT-AL count-2SG that which boy-with
 fog Mari beszélni?
 will Mary-NOM speak-inf
 Lit. 'What did they say that **on what** do you count that **with which boy** Mary will
 speak?'
 'What did they say, what do you expect with which boy Mary will speak?'

The highest wh-expletive, *mit*, shows the accusative Case assigned to the object of *mondtak* 'say', and the further embedded wh-expletive, *mire*, carries the Allative Case assigned to objects of *számítasz* 'count'. This indicates that when the matrix wh-expletive, *mit*, is generated, it is associated with the entire CP that it c-commands, in exactly the same way that the wh-expletive, *mire*, is associated with the CP that it c-commands. In this way, the following associations are formed:



The generation of a wh-expletive and its association with an embedded CP is uniform in single- and multiple-expletive constructions. Since the association is always established locally, we do not have to posit any phase boundary violations. That is to say, there is no long-distance association of expletives and deeply embedded CPs. We could argue that it is this ability of a language to establish a local feature-sharing relationship between an expletive generated in object position and a CP that allows the phenomenon of partial wh-movement to occur at all. While it has been suggested that a language's capacity for partial wh-movement depends on the existence of a wh-expletive in the lexicon (McDaniel 1989), it seems more likely that the possibility of forming these constructions hinges on a language's ability to make this expletive/CP association, since, if this association were possible, the existence of a wh-word with impoverished (i.e. unvalued) features would follow naturally. Furthermore, the mere existence of a wh-expletive in the lexicon does not necessarily directly imply the existence of partial wh-movement in the grammar.

Now that we have proposed a viable analysis of partial wh-movement constructions within a derivation by phase framework, there are a few issues which remain to be addressed, namely subcategorization and LF structure. Let us now briefly address these topics.

7. SUBCATEGORIZATION

Taking into consideration the embedded nature of the associate CP clause, we observe some intriguing subcategorization effects in partial wh-movement constructions. In the following examples, the verb *kérdeztek* 'ask' selects for a [+wh] complement, while the verb *mondtak* 'say' selects for a [-wh] complement, as we would expect:

- (40) a. *Mit kérdeztek, hogy kivel találkoztam?
 WHAT-ACC asked-3PL that who-with met-1SG
 'With whom did they ask that I had met?'
 b. Mit mondtak, hogy kivel találkoztak?
 WHAT-ACC said-3PL that who-with met-3PL
 'With whom did they say that they had met?' (Horvath 1997: 518-9)

Although the CP complement of *kérdeztek* contains a wh-phrase in its specifier, the addition of a wh-expletive in the matrix clause changes the subcategorization effects of the phrase. In a similar vein, the complement clause of *mondtak* also contains a wh-phrase in its specifier, but the addition of a wh-expletive in matrix position rescues the derivation from a subcategorization violation. It appears that a wh-expletive in matrix position in some way strips the associate complement clause of its typing as a [+wh] clause.

Many theories have been proposed to deal with this issue. Under a feature separation/percolation analysis, the *wh*-phrase in embedded CP specifier position loses its *wh*-feature, thus rendering the entire complement clause [-*wh*]. However, under the current analysis, the predicative relationship between the CP-associate clause and the *wh*-expletive may help to explain these facts without resorting to feature separation. Indeed, the embedded CP is not merely a complement of the verb in the traditional sense, but rather is also a secondary predication licensed by the *wh*-expletive, somewhat similar to the manner in which relative *wh*-clauses are predicated of their head DPs (Felser 2003). Because of this, the CP-associate does not carry any interrogative force as a complement, just as relative clauses do not. Like relatives, the *wh*-typing of a CP-associate in partial *wh*-movement serves to drive internal movement, but, because it is predicated of another constituent, it does not carry the interrogative force of a full *wh*-clause in the syntax. Consider the ambiguous string ‘I asked the man who gave me the book.’ The embedded *wh*-clause in this sentence may be understood as either a relative (‘the man who gave me the book was whom I asked’) or simply an embedded [+*wh*] clause (‘“who gave me the book?” is what I asked the man’). In partial *wh*-movement constructions, due to the predicative relationship between the *wh*-expletive and the CP-associate, the embedded CP is always understood in a manner similar to that of a relative, rather than that of an embedded [+*wh*] clause.

Given this lack of [+*wh*] typing in terms of verb subcategorization, the data in example (40) follow naturally. The presence of a *wh*-expletive in (40a) indicates a predicative relationship between the *wh*-expletive and the CP-associate, but the matrix verb requires a robust [+*wh*] complement clause that is not predicated of another constituent (i.e. with its full interrogative force). Conversely, the complement clause of (40b) satisfies the [-*wh*] subcategorization requirement of the matrix verb due to its predicative relationship with the *wh*-expletive.

8. LF STRUCTURE

Under the indirect *wh*-dependency approach to partial *wh*-movement in Horvath (1997), it is proposed that the CP-associate clause moves to matrix position at LF in a process of expletive replacement. Some support for this analysis has come from pied-piping of the entire *wh*-clause to matrix scope position in Basque:

- (41) [Nor etorriko d-ela bihar] esan diozu Mireni?
 who come aux-that tomorrow said aux Mary-D
 ‘That who will come tomorrow have you told Mary?’ (Ortiz de Urbina 1993)

So, similar to the way in which Basque overtly moves its *wh*-clauses to matrix *wh*-scope position, it is argued that the CP-associates of partial *wh*-movement constructions also move to matrix position at LF, replacing, or deleting, the *wh*-expletive. Under this view, since the entire CP-associate has moved to matrix position, we would assume that the *wh*-phrase contained within that clause may take wide scope. However, note the limitations on semantic interpretation in (42b) below. The existential quantifier *wo* ‘where’ is not always interpreted with the same scope in relation to the universal quantifier *jeder* ‘everyone’:

- (42) a. Wo glaubt jeder dass sie gerne leben würde? ($\forall > \exists, \exists > \forall$)
 where think everyone that she readily live would
 b. Was glaubt jeder wo sie gerne leben würde? ($\forall > \exists$ only)
 what think everyone where she readily live would
 ‘Where does everyone think that she would like to live?’ (Felser 2001)

The lack of a wide-scope interpretation of *wo* in (42b) suggests that the embedded clause (not to mention the *wh*-word itself) is not moving to matrix position at LF. Additionally, the lack of semantic uniformity amongst partial and full *wh*-movement constructions implies that their LF representations differ. While a complete semantic analysis is beyond the scope of the current project, the observation that the predicative association of a *wh*-expletive with an embedded interrogative CP yields observable effects on the semantic interpretation of a phrase helps to further underscore the complexity of these constructions.

9. CONCLUSION

In this paper, I have proposed that the phenomenon of partial *wh*-movement can be easily accounted for in terms of Chomsky’s derivation by phase. I have suggested a more robust theory of featural motivations for intermediate movements throughout the derivation, in addition to examining the featural makeup of *wh*-expletives. In my attempt to explain the mechanics underlying the formation of these constructions, very few theory-driven devices were implemented, in favor of an analysis in keeping with the Minimalist standard of economy. The present analysis justifies more clearly some of the data, such as Case features of *wh*-expletives, by positing a small clause-type predicative relationship between the CP-associate and the *wh*-expletive generated in object position. In later studies, this interpretation may similarly be applied to partial *wh*-movement constructions in other languages, in addition to accounting for other peculiarities of partial *wh*-movement found crosslinguistically. While empirical evidence for intermediate movements is scarce, I believe that further research will lend support to the derivational framework presented here.

REFERENCES

- Adger, David & Gillian Ramchand. 2001. Phases and interpretability. In Karine Megerdooian & Leora A. Bar-el, eds., *Proceedings of the 20th West Coast Conference on Formal Linguistics* (WCCFL 20), 101-104. Somerville, MA: Cascadilla Press.
- Cheng, Lisa. 1997. ‘Partial’ *wh*-movement. In Luther Chen-Sheng Liu & Kazue Takeda, eds., *UCI Working Papers in Linguistics* 3, 27-50. Department of Linguistics, University of California, Irvine.
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam. 1991. Some notes on economy of derivation and representation. In Robert Freidin, ed., *Principles and Parameters in Comparative Grammar*, 417-454. Cambridge, MA: The MIT Press. Reprinted in Noam Chomsky, 1995, *The Minimalist Program*, 129-166. Cambridge, MA: The MIT Press.

- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In Ken Hale & Samuel J. Keyser, eds., *The View from Building 20*, 1-52. Cambridge, MA: The MIT Press. Reprinted in Noam Chomsky, 1995, *The Minimalist Program*, 167-217. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 1995. Categories and transformations. In Noam Chomsky, 1995, *The Minimalist Program*, 219-410. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 2000. Minimalist Inquiries, the framework. In Roger Martin, David Michaels, & Juan Uriagereka, eds., *Step by step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89-155. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 2001a. Derivation by phase. In Michael Kenstowicz, ed., *Ken Hale: A Life in Language*, 1-52. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 2001b. Beyond explanatory adequacy. In *MIT Occasional Papers in Linguistics* 20. Cambridge, MA: MITWPL.
- Chung, Sandra. 1998. *The Design of Agreement: Evidence from Chamorro*. Chicago: University of Chicago Press.
- Dayal, Veneeta. 1994. Scope marking as indirect *wh*-dependency. *Natural Language Semantics* 2: 137-170.
- Fanselow, Gisbert. in press. Partial movement. To appear in Martin Everaert & Henk van Riemsdijk, eds., *SYNCOM (The Syntax Companion): An Electronic Encyclopaedia of Syntactic Case Studies*. The LingComp Foundation.
- Fanselow, Gisbert, & Anoop Mahajan. 1996. Partial movement and successive cyclicity. In Uli Lutz & Gereon Müller, eds., *Papers on Wh-Scope*. Working Papers of the SFB 340, 131-161. University of Tübingen.
- Felser, Claudia. 2001. *Wh*-expletives and secondary predication: German partial *wh*-movement reconsidered. *Journal of Germanic Linguistics* 13.1: 5-38.
- Felser, Claudia. 2003. *Wh*-copying, phases, and successive cyclicity. Ms., University of Essex.
- Groat, Erich. M. 1999. Raising the case of expletives. In Samuel Epstein & Norbert Hornstein, eds., *Working Minimalism*, 27-44. Cambridge, MA: MIT Press.
- Heck, Fabian, & Gereon Müller. 2000. Successive cyclicity, long-distance superiority, and local optimization. In Roger Billerey & Brook Danielle Lillehaugen, eds., *Proceedings of the 19th West Coast Conference on Formal Linguistics (WCCFL 19)*, 101-114. Somerville, MA: Cascadilla Press.
- Hornstein, Norbert. 1999. Minimalism and quantifier raising. In Samuel Epstein & Norbert Hornstein, eds., *Working Minimalism*, 45-76. Cambridge, MA: MIT Press.
- Horvath, Julia. 1997. The status of '*wh*-expletives' and the partial *wh*-movement construction of Hungarian. *Natural Language and Linguistic Theory* 15: 509-572.
- Horvath, Julia. 1998. Multiple *wh*-phrases and the *wh*-scope-marker strategy in Hungarian interrogatives. *Acta Linguistica Hungarica* 45: 31-60.
- McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In Samuel D. Epstein & T. Daniel Seely, eds., *Derivation and Explanation in the Minimalist Program*, 184-226. Oxford: Blackwell.
- McDaniel, Dana. 1989. Partial and multiple *wh*-movement. *Natural Language and Linguistic Theory* 7: 565-604.

- Ortiz de Urbina, Jon. 1993. Feature percolation and clausal pied-piping. *Generative Studies in Basque Linguistics* 105: 189-219.
- Pesetsky, David. 2000. *Phrasal Movement and Its Kin*. Cambridge, MA: The MIT Press.
- Svenonius, Peter. 2001. Locality, phases, and the cycle. Ms., University of Tromsø.

Tobin R. Skinner
Department of Linguistics
McGill University
1085 Dr. Penfield
Montreal, PQ H3A 1A7
Canada

tobin.skinner@mail.mcgill.ca

RÉSUMÉ

Une construction mouvement-wh partielle est une construction dans laquelle un syntagme à contenu sémantique se déplace vers un SpecCP plus bas que celui dont il prend son domaine d'application, tandis qu'un explétif-wh sans valeur sémantique apparente apparaît dans la position domaine-wh, et dans chaque spécifieur de CP intermédiaire. On a proposé deux types concurrentiels d'analyse pour expliquer ce type de mouvement: une approche de dépendance-wh directe (McDaniel 1989), et une approche de dépendance-wh indirecte (Horvath 1997, Fanselow & Mahajan 1996). En utilisant la notion minimaliste de dérivation par syntagme (Chomsky 2000, 2001a), cette étude propose une explication de mouvement-wh partiel qui soutient l'approche de dépendance-wh indirecte. Suivant Felser (2001), je stipule que l'explétif-wh est généré à la base en tant qu'argument en position d'objet du verbe, et que, par un type de prédication de petit syntagme, une association est établie entre le CP enchâssé et l'explétif-wh à travers lequel le cas et les traits- ϕ sont partagés. De plus, j'établis une théorie d'insertion et de mouvement explétifs en accord avec la condition de dernier recours de Chomsky (1993). De cette manière, nous pouvons utiliser une machinerie théorique pour expliquer la mécanique qui sous-tend le mouvement-wh partiel.

