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Phase and Phase Collapse : A Study of Topicalization and Focusing (Part 2)

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A Study of Topicalization and Focusing (PART II)

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4.2. Topics, Foci, and Wh-words

As is generally accepted, a wh-question operator constitutes a type of focus (cf. Horvath 1986, § 2.3; Kidwai 1999, etc.), either informational focus or wide focus (see note 1). After all, an answer to a wh-question consists in replacing a wh-phrase with some appropriate phrase, which constitutes the focus of the answer sentence. In this sense a wh-question word is inherently focal.

Given the single-focus-per-clause constraint (see (15) and note 6), which we assume applies to informational focus as well as to contrastive focus, this fact about a wh-question word leads us to expect that a wh-question phrase does not cooccur with a focus in the same clause, which is indeed the case.

- (22) a. *What to JOHN did you say (, not to Peter)?
 b. *To JOHN what did you say (, not to Peter)?
(23) a. *Che cosa A GIANNI hai detto (, non a Piero)?
 what to GIANNI (you) have told (, not to Piero)
 b. *A GIANNI che cosa hai detto? (Italian, Rizzi 1997)

Spanish seems to behave in the same way (C-S 1997:181f.). The unacceptability of (22)-(23) may be due to a conflict in focusing: a schizophrenic drawing of the hearer's attention to distinct items at the same time, a performance problem. This entails that a wh-question operator and a non-wh-focus, if located in separate clauses, cause no problem, even though they originate in the same clause. This is indeed the case: (6'b). Note that a wh-question word like what as a focus must raise to SpecFocP (and then on to SpecForceP if it always raises to SpecForceP, as I assume it must in at least some dialects of English, but not in Italian; see our discussion below).

This account need not be based on Rizzi's (1997) claim that a wh-question operator (wh-Q) moves to SpecFocP in Italian. Barbosa (1999) argues that a question operator moves to

SpecIP (SpecFinP in Rizzi's 1997 system of clause structure: "Force-Topic-Focus-Topic-Fin-Tense") in Italian, citing the fact that in Italian the order focus > wh-Q is marginally acceptable in embedded contexts, though not its reverse order.

(23') a. ?Mi domando A GIANNI che cosa abbiamo detto (, non a Piero).

(I) wonder to GIANNI what (they) have said (, not to Piero)

(Rizzi 1997) Cf. (23b)

Similarly, in Modern Greek (Barbosa 1999, footnote 3):

(23') b. Anarotiemē [to MORO]₂ píos₁ frondize x₁ x₂.

wonder.ls the BABY who cared.for

'I wonder who cared for the BABY.'

It seems then that in Italian a question operator targets Spec of IP (FinP), not SpecFocP.⁷

The reason why cooccurrence of a wh-focus (i.e., a question operator) and a non-wh-focus is acceptable in embedded contexts may have to do with the fact that indirect questions do not carry illocutionary force of question calling for a response to the question from the addressee. This means that the real problem with (22) and (23) lies in the difficulty the hearer has answering the question, while paying attention to the contrastively focused material.

As for Korean, which allows multiple foci in a single clause, I have no suggestion to make, except to say that some sort of "absorption" might be implicated as in multiple questions (see note 6).

The facts about focus seem to be more complicated according to Tsimpli (1995): in Modern Greek two non-wh-foci may not cooccur in the same sentence, even though they are distributed in separate clauses. I will not go into this, but one might conjecture, based on her descriptions, that the problem lies in the fact that the in situ focus in the embedded clause has matrix scope. This may mean that both the foci are competing for the same matrix scope, hence deviancy is expected.

What about topicalization with respect to wh-question? Topicalization creates an island for extraction, so a wh-question word may not precede a topic as in (24a), (24'a) and (25a), as expected. But the reverse order is unexpectedly allowed in Italian CLLD as in (24b) (Rizzi 1997, § 3) and Spanish CLLD as in (24'b) (C-S 1997:182), and marginally possible in English as in (25b) (Pesetsky 1989):

(24) a. *Che cosa, a Gianni, gli hai detto?

what to Gianni him you-have told

b. A Gianni, che cosa gli hai detto? (Italian, Rizzi 1997)

- (24') a. *¿Qué al jefe le compraron sus empleados?
 what to-the boss CL(him) bought his employees
 'What for the boss did his employees buy?' [my translation]
 b. Al jefe, ¿qué le compraron sus empleados? (Spanish, C-S 1997:182)
- (25) a. *To whom this book should Bill give?
 b. ?This book, to whom should we give? (Pesetsky 1989)

Considering English first, (25b) may be a case of defective Left Dislocation, for (26) is fine with a resumptive pronoun, according to my informant.

- (26) This book, to whom should we give it?

Alternatively, (25b) may indeed be a case of topicalization. We will return to this in § 4.3.

The Italian and Spanish cases are different from the English case in that as noted above, a *wh*-question operator (e.g., *che cosa/qué*) moves to the highest INFL projection, not Spec of C (=Force), according to Barbosa (1999), and Alexiadou & Anagnostopoulou (1998). They suggest that in the null subject languages rich agreement checks the EPP, and that SpecIP is an A'-position, the A-position for the subject being postverbal (i.e., SpecVP). If this is correct, which I assume in this study, (24b) and (24'b) are not problematical in our account, because the *wh*-question operator occupies SpecIP (SpecFinP), which does not constitute a strong Phase in our account.

Rizzi (1997) claims instead that a question operator moves to SpecFocP in Italian. If this turns out to be correct, it will not affect our account either, because FocP is not a strong Phase by assumption.

A *wh*-relative pronoun may cooccur with a focus but only in the ordering of relative-focus, just as expected. For a *wh*-relative operator is obviously not a focus - hence no focusing conflict - and focusing does not create an island, so free extraction of a relative pronoun is possible:

- (27) This is the book which to ROBIN I gave. (Culicover 1992)

Under this analysis *wh*-relative operators should be incompatible with topics in any order, if relative operators and topics universally move to SpecForceP and SpecTopP respectively, since ForceP and TopP both constitute islands, i.e., strong Phases (PH) in our terms. English behaves as expected in this regard.

- (28) a. *This is the book which, to Robin, I gave. (= (6c))
 b. *This is the book to Robin, which I gave.

In contrast, Italian and Spanish present counterexamples to this analysis: the relative pronoun raises across the topic.

- (29) a. Un uomo a cui, il premio Nobel, lo daranno senz'altro.
 a man to whom the Nobel Prize, it they-will-give undoubtedly
 b. *Un uomo, il premio Nobel, a cui lo daranno senz'altro.
 (Italian, Rizzi 1997)
- (29') La unica persona que a Juan nunca le ha hecho un favor ...
 the only person that to Juan never CL has done a favor
 (Spanish, C-S 1997:76)

Notice that in Italian and Spanish, wh-question words follow topics (see (24b) and (24'b)) in matrix contexts.

Rizzi captures the contrast between wh-question and wh-relative operators in (24b) and (29b) by assuming that the wh-question operator fills the SpecFocP position, while the wh-relative operator occupies SpecForceP. As pointed out above, Barbosa (1999) suggests that a question operator fills the SpecFin position.

However, a wh-question has the illocutionary force of question, for which Force, not Foc, should be responsible. So I assume, departing from Rizzi (1997), that Force bearing a feature [+Q] (related to the illocutionary force of question in the case of matrix clauses) triggers long-distance Agree with a wh-question word carrying features [+Q, +wh, +Foc]. Suppose the Italian/Spanish *matrix* interrogative Force associated with [+Q] lacks an EPP-feature, so it does not induce wh-movement as in (24b). This means that (29a) and (29') require a special account, for the topic island effect is missing here. We will return to this in § 4.3.

4.3. Phase Collapse

Grimshaw (1993) observes that in English, topicalization out of a wh-island and wh-question movement out of a topic island are marginally allowed, while wh-question movement out of a wh-island is flatly denied. See the following examples from Grimshaw (1993):

- (30) a. ?With that kind of job_i, even the government must wonder [who_j t_j could be happy t_j].
 b. ??Under which/what circumstances_i did you say [t_i' that children_j they would give those books to t_j t_j]?
- (31) a. *With what kind of job_i must even the government wonder [who_j t_j could be happy t_i t_j]?
 b. *Under which/what circumstances_i did you ask [which children_j they would give those books to t_j t_j]?

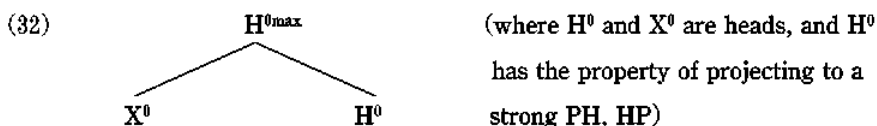
(31a) and (31b) are just as expected under the assumption of ForceP as a strong PH. In con-

trast, (30a) and (30b) are unexpected, since the wh-island and the topic island, which are taken here to be due to their status as strong PHs, should block any extraction from within. Indeed, Culicover judges such cases as flatly rejected (see (6)).

How can we account for the contrast between (30) and (31)? Notice that the sequence ForceP-TopP behaves as if it forms a single strong phase (PH) in (30). Suppose that Top raises to an immediately higher head (which happens to be Force in this case) and this merger causes the ForceP PH and the TopP PH to collapse into a single PH. Let us assume that this means that the TopP PH loses its phase status: it is no longer an independent PH, let alone a strong PH.

Otherwise, in (30b) a wh-question phrase as a focus (see the preceding discussion in § 4.2) will be stuck within embedded TopP (cf. the PIC (21)). The wh-question phrase in (30b) first moves to embedded SpecFocP. If TopP remains a strong PH, the wh-phrase will not be able to cross TopP to reach SpecForceP. We are assuming, modifying Chomsky (2000b), that ForceP and TopP constitute strong PHs (and so does PP, as we later argue). To simplify the exposition, I disregard here \bar{y}^*P , another strong PH in the theory of Chomsky (2000a, b).

Let us clarify the notion “phase collapse.” Consider (32).

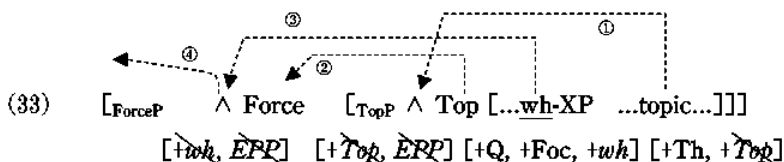


In (32) X^0 has incorporated to H^0 , which projects to H^{0max} and ultimately to HP, a maximal projection of H^0 . In contrast, the incorporee X^0 fails to project (see Chomsky 1995, Ch.4, which establishes that the target of movement always projects, not an adjunct). Suppose Top incorporates to Force. Top then will not project to TopP, a strong PH. If the trace of Top does not retain the property of projecting to a strong PH, TopP will no longer constitute a strong PH once Top has incorporated to Force. Let us refer to this as “phase collapse,” a strong PH (e.g., the TopP PH) collapsing with an immediately higher PH (e.g., the ForceP PH).

It seems that the dialects of English which marginally accept (30a) and (30b) exploit this strategy, which consists either in the combination of X^0 -to- H^0 movement and the failure of the trace of X^0 to retain the property of projecting to a strong PH (Alternative I) or in the latter failure alone (Alternative II). Some other dialects, which flatly reject them as in (6), either disallow Top-to-Force movement or choose the option of retention of the property by the trace of the incorporee. TopP then will remain a strong PH, accounting for cases like (6).

To begin with, assume that optional projections like TopP (and FocP) are available in all clauses. That is, regardless of whether a particular clause in question is to realize a topic (and a focus), the clause always has an option to generate TopP (and FocP). That is, Force always has an option to select Top (or Foc or TP). This assumption is needed for successive-cyclic application of topicalization (and focus preposing). Direct and indirect question clauses have a [+Q, +wh] Force (plus Foc, cf. § 4.2), while declarative clauses have a [-Q] Force (or the Force which simply lacks [Q]). For expository convenience, we will disregard FocP involved in *wh*-question movement for the moment.

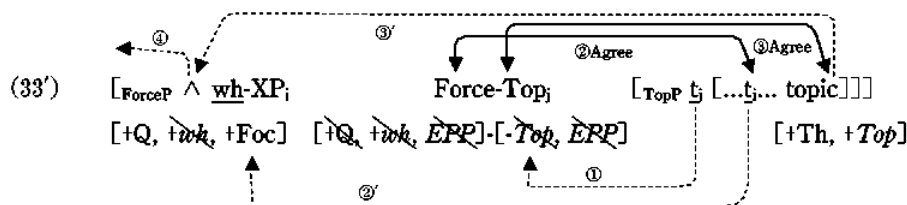
Let us ask then how we can account for (30). For the dialects of English that have a contrast between (30) and (31), I submit the following account. Recall our assumptions that optional projections like TopP and FocP are always *potentially* available in all clauses. Consider (30b) first. Its embedded clause has the structure in (33), where the italicization of a feature indicates that it is -Interpretable, as noted earlier (4.0).



The feature [+Top] on a topic and [+wh] on *wh*-XP render the topic and *wh*-XP “active” respectively in (33). The topic undergoes Agree with Top, deleting [+Top] on Top and the topic, and raises to SpecTopP, deleting [+EPP] on Top. And then Top raises to Force, triggering phase collapse. Hence *wh*-XP may raise out of TopP and land in SpecForceP, deleting [EPP] on Force. The feature [+wh] on Force has been already deleted by Agree between Force and *wh*-XP, though [+wh] on *wh*-XP, an activating feature, has not, presumably because (non-interrogative) Force bears [-Q] or lacks [Q]. That is, a full interrogative set [(+)Q, +wh] on Force would delete [+wh] on *wh*-XP (cf. such a full set on *wh*-XP, which deletes [+wh] on Force). Now *wh*-XP, still equipped with an “activator” [+wh], may freely move to matrix SpecForceP, driven by the feature [EPP] on matrix Force (via matrix SpecFocP) and delete [EPP] on matrix Force.

Next, consider (30a). I adopt as a null hypothesis the assumption that Agree/Match may optionally take place any time the relevant required conditions are met. Under this hypothesis, the topic need not undergo Move before Top raises to Force in (33), the structure basically shared by (30a) with (30b). Top raises to Force first, triggering phase collapse, and then *wh*-XP enters into Agree with Force, deleting [+wh] on Force and on itself as well as [+Q] on

Force, next raises to inner SpecForceP, deleting [*EPP*] on Force. The resulting structure is (33'). Next, the topic with a full topic feature set, i.e. [*+Th*] and an activator [*+Top*], Agrees with the Top head, deleting [*-Top*] on Top, and then raises out of TopP and moves to outer SpecForceP, driven by [*EPP*] on Top, which is now incorporated in Force, as in (33'). Note that Force and Top have [*EPP*] each, which entails multiple specifiers for Force-Top. I am assuming that even a non-topical clause may have the head Top.



Now the topic is free to raise to matrix SpecTopP.

Consider (31). Since (31a) and (31b) contain only multiple *wh*-question operators each, phase collapse of TopP with ForceP does not enter the picture. One moved *wh*-XP (e.g., *who* in (31a)) is sufficient to delete the *EPP*-feature on embedded Force, so the other *wh*-XP (e.g., *with what kind of job* in (31a)) cannot move to embedded SpecForceP. Nor can it directly move to matrix SpecForceP because of the intervening *who* (“defective intervention effects” of Chomsky 2000a, b), so it is frozen in place. The uninterpretable *EPP* feature, [*+Q*], and [*+wh*] on matrix Force will remain, causing the derivation to crash. Forms like (31a), (31b) are never generable.

It is important to note that multiple occurrence of overt elements in SpecForceP is disallowed in many languages including Germanic languages except Yiddish. In (33') for example, either topic or *wh*-XP must move out of embedded SpecForceP in English. This is not true of multiple question constructions in Slavic languages. Thus, a parameter is involved here, which can easily be fixed by the child, so it presents no problem in acquisition.

Let us reconsider the German facts about (11a) and (11b), discussed in § 4.1. (11a) and (11b) are reproduced below.

- (11) a. **Was_i glaubst du gestern_j hat der Fritz _j _i repariert?*
 what believe you yesterday has the Fritz repaired
 ‘What do you think yesterday Fritz repaired?’ (Park 1998:154)
- b. **Was_i glaubst du GESTERN_j hat der Fritz _j _i repariert?*
 ‘What do you think YESTERDAY Fritz repaired?’ (Park 1998:154)

In V2 Germanic languages V raises to Force (via T, Foc, Top) in the embedded clause (i.e., V

2 in the embedded clause) in (11). If the language (dialect) in question adopts the value of the “trace parameter” which allows the trace of raised Top to retain the property of projecting to a strong PH (non-use of Alternative II of phase collapse above), then (11a) will be excluded, for the wh-question operator was will not be able to escape TopP, since TopP remains a strong PH.

(11b) is more difficult to exclude. Consider the embedded clause. The movement of Foc (plus V) to Force, which is unique to V2 languages, must be a clue to understanding why (11b) is deviant. The incorporation of Foc with [+Foc, EPP] into declarative Force with [(-Q), +wh, EPP] licenses the raising of the focus GERSTERN to Spec of Foc-Force, deleting [+Foc, EPP] on Foc. Note that FocP is not a strong phase, so nothing stops was from raising across FocP. Force with [+wh, EPP] (plus [-Q]) should license the raising of was with [+Q, +wh, +Foc], yet the raising must incur some violation. For, if it were licit, was would have no difficulty raising into the matrix clause subsequently.

Interestingly, a similar contrast to (30a) versus (31a) is found in (perhaps some dialects of) German. (30'a) is a reverse case of (11a) with a matrix wh-question and embedded topicalization.

(30') a. ?Radios_i weiß ich nicht, wer _{t_i} repariert.

radios know I not who repairs

'As for radios, I don't know who repairs them.'

(31') a. *Welche Radios_i weiß du nicht, t'_i wer _{t_i} repariert?

which radios know you not who repairs

'For which radios don't know who repairs them?' (d'Avis 1995:89, 97)

The relative acceptability of (30'a) as opposed to (31'a) shows that the deviancy of (11b) is not due to a ban on multiple Specs of ForceP per se in German. See also (30a) and our discussion of (33'). (30a) and (30'a) are fine, though not perfect, each with one overt Spec and another non-overt one (trace) in the embedded ForceP. In contrast to the dialect that disallows (11a), the dialect of German that allows (30'a) perhaps makes recourse to the phase collapse strategy (Alternative II of phase collapse). The contrast between (30'a) and (31'a) then is expected under our analysis.

In the light of the above account of the German dialect, it might be the case that the movement of a wh-relative word across a topic in (29a) and (29') may involve the phase collapse strategy: Top raises to a higher head and the trace of Top loses the relevant property. The question remains why this takes place only in the embedded clause in Italian. This phase collapse can account for the marginal acceptability of focus-topic ordering (Frascarelli 2000:98-

100) as well.

In fact, the embedded contexts seem to give rise to the exploitation of the phase collapse strategy. Consider the following examples, from Barbosa (1999), where a question operator precedes a topic.

- (34) a. ?Mi domando a chi, il premio Nobel, lo potrebbero dare.
 ‘(I) wonder to whom the Nobel Prize (they) could give it.’ (Italian)
 [The reverse order of the *wh*-operator and the topic yields a perfect sentence.]
- b. Je me demande bien à qui, de temps en temps, Marie telephone.
 ‘I wonder to whom occasionally Mary makes a telephone call.’
 (French)
- c. Sabes quando ao Pedro mais lhe convém lá ir?
 know-2SG when to-theP. More to-him is-convenient there to-go
 ‘Do you know when, to P., it is convenient to go there?’
 (European Portuguese) (Barbosa 1999)

The sentences in (34) suggest that the embedded TopP may undergo the phase collapse strategy in French and European Portuguese and marginally in Italian. Notice that the embedded clause is selected by the matrix predicate in contrast with the matrix clause, where the strategy is not exploited. Selection apparently gives rise to this possibility in some languages, an observation due to Michio Wada (p.c.). The matrix verb licenses a phase collapse of Force-Top in its complement in some dialects. For the root contexts, see the following sentence, also from Barbosa (1999):

- (35) *A chi, il premio Nobel, lo daranno? (Italian)
 to whom the Nobel Prize it will-give.3pl

In contrast, Catalan and Spanish never allow the order “question operator-topic,” even in embedded clauses, according to Barbosa (1999):

- (34') No sé (en Joan) quan (*en Joan) el veuré. (Catalan)
 not know.1s (the J.) when (the J.) him will-I-see
 ‘Joan, I don’t know when I’ll see him.’ [The subject is topicalized here.]

All of this means that the embedded interrogative/relative Force has an EPP feature unlike the matrix one (see (24a), (24’a) and our discussion at the end of § 4.2) in Italian, French, and European Portuguese (see (34)), and drives the raising of the *wh*-operator to SpecForceP across TopP, given phase collapse. The English facts in (25) may receive the same account,

for witness (25'):

- (25') ?I wonder to whom this book we should give. (Pesetsky 1989)

Again, TopP in embedded contexts allows extraction from within (in the relevant dialect at least).

Returning to (11b), it seems that cooccurrence of a non-wh-focus GESTERN with [+*Foc*, +*Cont* (see § 4.0)] and the trace of a wh-question word was with [+*Foc*] in the Spec position of embedded *Foc*-Force is the culprit for some reason in the relevant dialect of German, not the multiple occurrence of Specs per se. The English case (6'b) is somewhat different: the non-wh-focus to ROBIN sits in embedded Spec*Foc*P, while the trace of which book fills embedded Spec*Force*P, for English lacks V2.

4.4 Phase Collapse and Its Implications

We have reason to believe that phase collapse is a marked strategy in English. I claim that English P-stranding is in part due to this strategy. Crosslinguistically, PP forms an island for extraction, as is well known. So it is reasonable to say that PP constitutes a strong PH, and all extraction from PP is in principle precluded except via the head and its edge. See Riemsdijk (1978), Baltin (1985), Corver (1990a, b), etc. for the islandhood of PPs, which was originally attributed to the "Head Constraint" (Fiengo 1974).

- (36) a. *Qui_i as-tu conté [sur t_j]? (French)
 who have you counted on
 b. *Chi_i hai parlato [con t_j]? (Italian)
 who (you)have spoken to
 c. *Jaki stół_i Jan wskoczył [na t_j]? (Polish)
 which table John jumped onto (Corver 1990:261)
- (37) a. Hans hat mit Maria gesprochen.
 Hans has with Maria spoken
 'Hans has spoken (i.e., spoke) with Maria.'
 b. *Wem_i hat Hans [mit t_j] gesprochen?
 whom has Hans with spoken
 'Whom has Hans spoken with? i.e., Who did H. speak with?'
 (Czepluch 1996; my glosses and translation)

English (as well as Scandinavian languages, and more restrictedly Dutch and Macedonian (Riemsdijk 1978), Frisian (Hoekstra 1995), and German (Czepluch 1996, Law 1998)), excep-

tionally allows some such extraction under certain conditions, somewhat different depending on whether "NP" movement or *wh*-movement is involved – more stringent conditions on the former (requiring the semantic unit status of the V-P complex) than on the latter. See Riemsdijk (1978) and Hornstein & Weinberg (henceforth, H&W) (1981).

Let us examine the structure of PP. Consider (38)-(39).

- (38) a. [How far]_i did he go [_{t_i} into the woods]?
 b. [How many feet]_i did the monster raise his head [_{t_i} above the water]?
 (Corver 1990b:13)
- (39) a. Jan wist niet [[hoe diep]_i het lijk [_{t_i} onder de grond] lag].
 John knew not how deep the body under the ground lay
 b. Jan wist niet [[hoeveel meter]_i het lijk [_{t_i} onder de grond] lag].
 John knew not how-many meter the body under the ground lay
 (Dutch, *ibid.*)

Corver (1990b) establishes that the material in the brackets containing *t* in the (38) and (39) sentences (e.g., [_{t_i} into the woods] in (38a)) forms a constituent and that the constituent is a maximal projection of P, i.e., PP. That is, these sentences in fact involve subextraction of a left branch modifier out of PP.

He arrives at the conclusion about the constituency on the basis of a number of syntactic arguments such as word ordering in Dutch, the deviancy of forms like "**Into the woods_i he went [deep _{t_i}]*" or its Dutch analogue, the unacceptability of such coordination as "**Joe stuck his finger deep [both into Sue's mouth and into my mouth],*" or its Dutch equivalent. He then convincingly argues that the constituent in question is PP on grounds of selection by the verb, "extraction," stylistic inversion in forms like "(Deep) Into the woods ran a herd of gnus!" in English, and cleft constructions like "It was [(deep) under the ground] that I found the body." Thus I will adopt the analysis proposed in Corver (1990a:274).

- (40) [_{PP} [_{DegP} ...Deg [_{QP} ...Q [_{AP} ...A]]][_{P'} P...]]

Corver observes that subextraction of left branch modifiers out of PP is permitted in non-P-stranding languages like French, Italian, Romanian and Polish. Thus, this possibility of extraction via an escape hatch ("edge") is clearly available in language in general.

Specifics aside, I suggest that unlike Dutch and German, English allows raising of P to V in the case of pseudopassives with P-stranding, collapsing the PP PH with the next higher strong PH. PP then loses its strong PH status in effect, so the object of P may directly move out of PP (i.e., not exploiting the escape hatch of SpecPP), and raise to SpecTP.⁸

This analysis accounts for two things. First, the resulting V-P complex represents a compound of the type look into as in (41), which means that the whole complex has a meaning of its own ('investigate' in the present case), forming a "semantic word" (Riemsdijk 1978:224ff.; H&W 1981, § 6).

- (41) This matter must be looked into. [pseudopassive]

So this raising is licit only when it forms a more or less idiomatic expression like look into. Otherwise the compound verb receives no interpretation and violates FI at the C-I interface.

Secondly, the P-to-V raising plus compound formation triggers phase collapse, allowing for direct extraction of a prepositional object from the object position of P in English. The present account captures the essence of the Riemsdijk-H&W analysis of pseudopassives ("Reanalysis") in English under our phase collapse theory. German does not employ this strategy: "Dem Kerl wurde völlig mit t_j gerechnet 'The guy has been fully counted on' (Law 1998:230)."

Dutch has an operation called "P-shift," which raises a motional postposition to the following verb, and yet no pseudopassives are possible (Riemsdijk 1978, § 6.2.2). It may be that this raising causes phase collapse (witness some syntactic extraction out of PP; see Riemsdijk 1978, § 4.5.2). Presumably P-shift does not yield a compound with an idiomatic sense, so no pseudopassives are allowed. P-shift is restricted to *motional postpositions*, a restricted operation.

In the case of wh-movement with P-stranding, which is less constrained than pseudopassives, a *different* mechanism is involved.⁸ This mechanism is exploited in Dutch and German, and more widely in English and Scandinavian languages. In Dutch and German certain pronominal elements including wh-words (possibly with pied-piping) move from the internal argument position of P to the edge of PP. They subsequently escape the strong PH, PP.

Let us see some motivation for this claim. Riemsdijk (1978) shows that in Dutch only r-pronouns (er 'there', daar 'there', and waar 'where') may prepose to a pre-P position within prepositional PP and then move out of PP altogether, circumventing the "head constraint." Following Riemsdijk, I assume that PP is underlyingly prepositional in Dutch. See the following examples, adapted from Riemsdijk (1978:135):

- (42) a. Ik heb er_j niet [_{PP} t_i [_{op} t_j]] gerekend.

I have there not on counted 'I did not count on it'

- b. Waar_j heb je [_{PP} t_i [_{op} t_j]] gerekend?

where have you on counted 'What did you count on?'

Riemsdijk dubs the movement "r-movement" and shows that the movement internal to PP and subsequent extraction from it are both triggered by a feature [+R]; hence only r-pronouns with

[+R] (i.e., er, daar, waar) undergo both steps of r-movement. They also bear a feature[-H (uman)] and waar carries an additional feature [+wh]. Notice that r-movement is further constrained by an adjunct condition, as is syntactic movement in general: only extraction out of an argument PP is allowed.

For empirical evidence for the internal movement, see (43)-(44).

- (43) a. [_{PP} [_P [_{DegP} vlak] [_P er_i na t_j]]] (Riemsdijk 1978:87)

right there after

- b. [_{PP} er_i [_P [_{DegP} vlak] [_P na t_j]]] (ditto)

- (44) a. [_{PP} waar_i [_P op t_j]] (ibid., p.37)

where on 'on what'

- b. [_{PP} Waar_i [_P vandaan t_j]] belt hij? (ibid., p.135)

where from calls he 'Where does he call from?'

I suggest that in Dutch, P has a pair of features [+R] and [EPP] associated with it. R-pronouns then raise from the post-P position to SpecPP and then out of PP altogether, as in (45).

- (45) [_{PP} \wedge ([_P DegP [_P \wedge) [_P P er/daar/waar](_i)]]
-

Thus, P-stranding with r-movement is possible in Dutch, as in (42). See Corver (1990a) for further arguments for this line of analysis.

Similar facts obtain in German: "Wo_i/*Was_i interessierst du dich [_{PP} t_j für t_j]? 'What are you interested in' (Law 1998:219)," where an r-pronoun wo 'where', but not a non-r-pronoun was 'what', is successfully extracted from PP headed by für 'for'. Consider also "Wo_i hörte man nie [_{PP} t_j von t_j]? 'What did one never hear of?' (adapted from Law 1998:224)." Frisian behaves essentially like Dutch and German, allowing only r-movement out of PP (Hoekstra 1995).

Let us consider next wh-movement out of PP in English. I conjecture that English also has a similar set of PP-internal movement and extraction operations, with some differences. I believe that English forms like whereby, whereto, whereof, thereto, therewith, hereafter, etc. are frozen and not derived by an operation like r-movement, following Riemsdijk (1978:207). For one thing, there is no counterpart to r-movement out of PP in English. Instead wh-movement, not r-movement, takes place inside PP and then crosses the PP boundary, I claim. Suppose P carries features [+wh] and [EPP] in English. Wh-phrases with a feature [+wh] then raise in much the same way as in (45), instead of r-pronouns. So wh-movement with P-strand-

ing is possible in English:

- (46) Who did John travel with?

For some evidence for PP-internal movement in question, see sluicing as in “John left, but I don’t know [who_i with t_j]” (Riemsdijk 1978:226ff.; also Lobeck 1995), although more complex wh-phrases fail to move PP-internally for some unknown reason: “*John left with some students, but I don’t know [_{PP} which ones_i with t_j]” (Law 1998:222; see also Culicover 1999:133-140). Culicover argues against PP-internal wh-movement on the basis of the limited productivity of the construction, but then it is unclear how to account for the reversed order. Cases like (47) (from Riemsdijk 1978:145) are unacceptable by virtue of violation of the adjunct condition on extraction:

- (47) *Which break should we leave during t_j?

Let us return to the case of the island effects of German topicalization, discussed in § 2. The newly introduced theory of phase collapse does not affect our earlier account of the topic island effects with regard to German. Consider (9a), repeated here.

- (9a) *Ich weiß wen_i du sagtest [_{CP} Ede_j habe_k [_{IP} t_j t_j getroffen t_k]].

In German Top invariably raises to Force, but the trace of Top still retains the property of projecting to a strong phase TopP (in the relevant dialects), so phase collapse does not come into play. See (11a).

Thus, in the embedded clause (9a), the topic phrase Ede may raise to SpecTopP first, and then Top raises to Force. The strong phase effect of TopP is still in force, so wen cannot move across TopP to reach SpecForceP. Alternatively, Top may raise before the topic phrase Ede does. In this derivation too the strong phase effect of TopP is still in force, preventing both Ede and wen from moving across TopP to Spec of Force/Top. Essentially the same account applies to (9b). So no new problem arises on account of the phase collapse theory.

On our account the exceptional cooccurrence of a wh-question phrase and a topic in the same clause in Yiddish receives a straightforward account in these terms. Yiddish makes recourse to the phrase collapse strategy. A sentence like (48), due to Pintzuk (1991:58), illustrates the point in case:

- (48) ikh veys nit far vos in tsimer shteyt di ku.

I know not why in room stands the cow

‘I don’t know why the cow is standing in the room.’

The topic in tsimer first raises to SpecTopP, and then Top moves to Force, triggering phase collapse. Suppose the trace of Top then loses the ability to project to a strong PH. The wh-

phrase far vos now can cross TopP and land in SpecForceP. This means that Yiddish differs from the dialect of German that forgoes the phase collapse strategy with regard to the use of the marked option of the strategy.

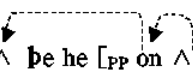
Scandinavian languages more or less pattern with English regarding P-stranding. Holmberg & Platzack (1995:220) point out that pseudopassives are common in Norwegian, more marginal in Swedish, and excluded in Danish (see (49)). Maling & Zaenen (1990:155) show that in Icelandic A'-movement like topicalization, wh-movement allow P-stranding (50a), whereas passive does not. Swedish and Danish allow P-stranding in A'-movement like Icelandic ((50b) and (50c) are provided by my informant, Peter Fenger.).

- (49) a. at Petter ble ledd av. (Nor)
 that Peter was laughed at
 b. (?)att Peter skrattades åt. (Swe)
 c. *at Peter blev grinnet af. (Dan)
- (50) a. Pennan ref_i hefur aldrei verið skotið á t_j. (Ice)
 that fox-ACC has never been shot at
 b. Vad_i talade du om t_j? (Swe)
 what talked you about
 c. Hvad_i så Jim ind i t_j? (Dan)
 what looked Jim into in 'What did Jim look into?'

4.5 Some Historical Evidence for Our Account of P-stranding

The diachronic change from Old English (OE) to (Early) Middle English ((E)ME) provides some evidence for our account of P-stranding. Arnold (1995, 1996) argues that P-stranding is an instance of the LF incorporation of P into V in ME. Van Kemenade (1987) shows that P-stranding in English is an ME innovation.

In OE, P-stranding is found only in be-relatives, tough movement constructions, and infinitival relatives, all of which involve null relative operator movement, and interestingly, it is also found in clitic pronoun extraction out of PP. Observe (51).

- (51) a.  þære scole \wedge þe he [_{PP} on \wedge] leornode (Oros 150,5)
 the school that he in learnt
 'the school that he learnt in' (van Kemenade 1987:167)

- b. & bæd bæt him mon brohte þone triumphan [PP ongean ^]
 and ordered that him they brought the victory to
 'and ordered them to bring victory to him' (Oros 126,1)
 (van Kemenade 1987:145)

For illustrations of P-stranding in infinitival relatives and tough movement constructions, see van Kemenade (1987:151f.), Denison (1993, § 7.2.4).

In (51a) (as well as in infinitival relatives and tough constructions) a null relative operator, which is an X^0 -element as well as an X^{\max} element, syntactically cliticizes to P on the left from its post-P position, I assume, somewhat modifying van Kemenade's (1987:167) account. She suggests that the operator is base-generated in the cliticized position on the left of P and associated with a null prepositional object in the post-P position. I conjecture that the operator next raises out of the PP PH from this *head* position and moves to SpecCP (presumably SpecForceP). (51b) also involves a similar derivation, except that the raising element is a clitic pronoun (including an r-pronoun), again an X^0 -element as well as an X^{\max} element, and that it finally cliticizes to the complementizer bæt, as in van Kemenade's account. No general P-stranding is allowed in OE: only an X^0 -element may be extracted from the post-P position out of PP via cliticization to P. Pintzuk (1991) adopts this analysis.

In EME a full-blown P-stranding appears on the scene, according to van Kemenade (1987, Ch.6), who argues that personal pronouns began to lose their clitic status, starting to occur in the post-P object position in EME (see also Denison (1993, Ch.7)). This means that a personal pronoun ceased to behave as a clitic in EME. An r-pronoun behaved differently, continuing to cliticize to P.

In the course of ME, general P-stranding with wh-relatives, wh-questions, topicalization, and passive constructions became possible and increased. Cf. Allen (1977), van Kemenade (1987), Denison (1993), Arnold (1995), and the literature cited in these works. This (generalized) P-stranding involves full lexical NPs, not clitics.

Consider (52).

- (52) a. heo schal beo greattre ibollen, leafdiluker leoten of þen a leafdi of hames
 she shall be greater honoured, lady-likier thought of than a lady of homes
 'She shall be more greatly honoured, thought of as more lady-like than
 a housewife.' (AW, 58, 7) (van Kemenade 1987:209) [pseudopassive]

- b. Wiste noman of werlðe ðo quat kinde he was kumen fro
 knew no man of world then what kind he was come from
 'no one in the world then knew what kind he had come from'
 (G & Ex.90) (Allen 1977: 226) [wh-relative]
- c. c1230 (?a1200) *Ancr.* 103a.22
Pulliche dunes þe gode pawel spek of;
 those-very hills the good Paul spoke of
 (Denison 1993:113) [topicalization]

The movement of full lexical XPs in (52) cannot receive an explication in terms of cliticization, which involves X^0 -elements.

Arnold (1995, 1996) argues that all types of P-stranding in ME arise through incorporation of P into V. In the case of A-movement (passivization) this incorporation is subject to the condition that P *optionally* assigns Case to avoid double Case assignment. This option arose by 1200. In EME a distinction between Accusative and Dative Case was lost due to the loss of the overt morphological distinction. Thus, prepositions, which used to typically assign Dative to their complements in OE, now begin to assign accusative, just like verbs. He then suggests that in EME prepositions may optionally have no Case to assign and are optionally assigned an affix feature, which requires their incorporation into a V head. The combined effects of the absence of Case and the presence of an affix feature on P are such that prepositions are forced to incorporate into V in A-movement like passive.

Under our phase collapse analysis, the P-incorporation to V under these circumstances triggers PH collapse and sets the stage for extraction of the prepositional object directly from the post-P position, giving rise to pseudopassives. We slightly modify this account by claiming that the incorporation in question takes place in 'overt' syntax. Our PH collapse analysis can easily account for historical developments of P-stranding with regard to pseudopassives and hence receives some empirical support. We might say that ME newly adopted the PH collapse strategy, perhaps triggered by a change in affix/nonaffix status of prepositions.

As for P-stranding with wh-relatives, wh-questions, etc. we depart from Arnold (1995, 1996), claiming that this variant of P-stranding exploits the escape hatch of PP, i.e., SpecPP, for the reasons stated in § 4.4. Arnold's account of P-stranding with A'-movement is problematic, as it is in part based on the essentially same incorporation of P to V and thus cannot easily distinguish between the range of P-stranding in passives and in wh-movement (cf. the semantic unit condition on P-stranding with passives vs. its absence with wh-movement).

5. Concluding Remarks

It is important to note that the head movement involved in phase collapse is not distinct from what Baker (1988) calls “Incorporation.” In his terminology P-to-V movement in English pseudopassives is Preposition Incorporation (PI). Our phase collapse then partly captures his Government Transparency Corollary (GTC), which states that a lexical category which has an item incorporated to it governs everything which the incorporated item governed in its original structural position.

The GTC allows the incorporation host to govern into a domain otherwise ungovernable, i.e., allows it to govern the elements that the incorporee governed in its original position, so that extraction may take place from the governed position. Phase collapse amounts to extension of the strong PH in question all the way down to the next lower strong PH. At least to the extent that the GTC is valid, the phase collapse theory is valid in general.

To illustrate the GTC/phase collapse effect, we will consider the benefactive applicative construction in Chichewa in (53), taken from Baker (1988:14).

- (53) a. Mbidzi zi-na-perek-a mpiringidzo kwa mtsikana.
zebras SP-PAST-hand-ASP crowbar to girl
‘The zebras handed the crowbar to the girl.’
- b. Mbidzi zi-na-perek-er-a mtsikana mpiringidzo
zebras SP-PAST-hand-APPL-ASP girl crowbar
‘The zebras handed the girl the crowbar.’
- c. Mtsikana a-na-perek-er-edw-a mpiringidzo ndi mbidzi
girl SP-PAST-hand-APPL-PASS-ASP crowbar by zebras
‘The girl was handed the crowbar by the zebras.’

Notice that the preposition kwa in (53a) is incorporated as an applicative affix -er to the verb in (53b), in which the original prepositional object mtsikana has become an “applied object.” This object can be passivized as in (53c), a case of the phase collapse effect, I claim.

These languages then exhibit dative shift phenomena, as in (53). Baker (1988, § 5.3.5) proposes that English dative shift should be treated on a par with the alternation found in (53). If his analysis is on the right track, phase collapse is involved in English dative shift constructions as well. PI is quite common in polysynthetic languages, as convincingly shown by Baker. See also Marantz (1984) regarding these issues.

Chomsky (2000b) hinted at the possibility that DP may constitute a strong PH. If it in-

deed forms a strong PH, then Noun Incorporation of Baker (1988, esp., Ch.3), another familiar feature of polysynthetic languages, may qualify as yet another instance of phase collapse.

In this type of language phase collapse is an unmarked strategy in contrast to English-type languages. Thus, it seems that our notion phase collapse may be adopted in favor of the notion of government crucial in Baker's theory, a notion unavailable to the Minimalist framework, although not all cases of incorporation are covered by phase collapse.

Notes

7. Barbosa (1999) tries to account for the unacceptability of (23a) in terms of her claim about a question operator targeting SpecIP on the basis of the facts about (23'a) and (23'b). However, her account does not seem to extend to English cases like (22a) (cf. (22b)).
8. Other approaches to P-stranding (e.g., Kayne 1984, Bennis & Hoekstra 1984, etc.) present government-theoretic accounts of the phenomenon, which are unavailable on the Minimalist assumptions. Law (1998) proposes a different account of the possibility of P-stranding in Germanic and Romance languages in terms of D-to-P incorporation in syntax. If the incorporation takes place resulting in contraction like du (= de + le 'of + the') in French, D and its complement NP do not form a constituent and necessarily fail to move together stranding P, as in Romance and to some extent in Dutch and German, in contrast to English. This account is neat, but fails to distinguish P-stranding under wh-movement and under passivization.

Another serious problem with this account is that the contraction of de + le/la is phonologically conditioned: the contraction does not occur when the definite article le or la is followed by a vowel-initial word, in which case both le and la contract with the following word as *l'*, not with *de*. Even in such a case P-stranding is not licensed: **L'ancien maître est parlé de* 'The old teacher is spoken of' / **Quel ancien maître parlez-vous de?* 'Which old teacher do you speak of?'

Furthermore, the analysis incorrectly predicts the acceptability of an extracted DP containing the trace of D, an extracted NP in effect, in Romance: **[_{DP} t Maître] est parlé du*. 'Teacher is spoken of-the.'

More importantly, the unmarked absence of P-stranding in language in general is captured by a marked process of D-to-P incorporation in his account. This seems to me counterintuitive, so we will seek an alternative solution.

9. Wh-movement is less constrained than passivization with regard to P-stranding, suggesting that different mechanisms are involved. Observe the native speaker judgement on the (i)-(ii) sentences:
 - (i) a. Jim disappeared into the barn.
 - b. What did Jim disappear into?
 - c. *The barn was disappeared into (by Jim).
 - (ii) a. Jim looked into the matter.
 - b. What did Jim look into?
 - c. The matter was looked into (by Jim).

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[See also "References " in Part I of this article.]

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