

From *Hell* to Polarity: “‘Aggressively Non-D-Linked’” *Wh*-Phrases as Polarity Items

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Pesetsky's (1987) “‘aggressively non-D-linked’” *wh*-phrases (like *who the hell*; hereinafter, *wh-the-hell* phrases) exhibit a variety of syntactic and semantic peculiarities, including the fact that they cannot occur in situ and do not support nonecho readings when occurring in root multiple questions. While these are familiar from the literature (albeit less than fully understood), our focus will be on a previously unnoted property of *wh-the-hell* phrases: the fact that their distribution (in single *wh*-questions) matches that of polarity items (PIs). We lay out the key data supporting this claim, embed the PI nature of *wh-the-hell* phrases in the theory of polarity developed in Giannakidou 1998, 1999, 2001, and establish the link between the lexical content of these phrases and their PI status by identifying *wh-the-hell* as a dependent PI. We subsequently exploit the PI status of *wh-the-hell* to explain the more familiar puzzles mentioned above, showing that these are not peculiarities specific to *wh-the-hell* but manifestations of the general properties of the class of PIs that *wh-the-hell* belongs to. The syntactic aspects of the polarity analysis of *wh-the-hell* are shown to have important consequences for the fundamental properties of *wh*-movement in English.

Keywords: aggressively non-D-linked *wh*-phrases, polarity items, (non)veridicality, dependent indefinites, rhetorical and echo questions, root/nonroot asymmetry, *wh*-movement, focus movement, intervention effects

We are grateful to Felicia Lee and Hans-Georg Obenauer for kindly sending us their materials on *wh-the-hell*. For useful comments, judgments, questions, and suggestions, we would like to thank Joseph Aoun, Mark Baltin, Gennaro Chierchia, Kleanthes Grohmann, Larry Horn, Richard Kayne, Anikó Lipták, Jason Merchant, Anna Szabolcsi, Myriam Uribe-Etxebarria, and audiences at the First CUNY/SUNY Linguistics Mini-Conference, the NYU Linguistics Colloquium, the LEHIA Summer Courses (San Sebastian), and NELS 31 (Georgetown University). Some of the material included here has appeared in the proceedings of NELS 31, as Den Dikken and Giannakidou 2001; this article fully revises that paper, developing a comprehensive analysis of the semantics of *wh-the-hell* and embedding the polarity analysis of *wh-the-hell* into a general discussion of the syntax of *wh*-movement. The usual disclaimers apply. Anastasia Giannakidou wishes to thank the Royal Netherlands Academy of Sciences (KNAW) for financial support during the completion of this project.

1 The Parallels between *Wh-the-Hell* and Polarity Items

This article focuses on *wh*-phrases like *what on earth*, *who the hell*, *what the dickens*—generically, *wh-the-hell* phrases. In simple root *wh*-questions, *wh-the-hell* phrases seem to behave just like ordinary *wh*-phrases.

- (1) a. Who bought that book?
- b. Who the hell bought that book?

Both interrogatives in (1) are genuine information questions. The speaker who utters either (1a) or (1b) expects that somebody did indeed buy that book and seeks information about the identity of the buyer(s). Hence, answers naming the buyer (e.g., *Ariadne*) would be appropriate.¹

Yet, in addition to an informative answer, (1b) licenses a negative inference of the form *Nobody was supposed to buy that book*; Lee (1994) labels this inference the ‘surprise’ reading. This proposition is a pragmatic inference conveying the speaker’s negative attitude toward the content of the question with *wh-the-hell*, as we argue in section 2.2; it generally coexists with the possibility of a positive answer.

Wh-the-hell and ordinary *wh*-phrases also go their own separate ways once we consider (a) the possibility of negative answers with modal verbs, (b) their occurrence as complements of positive veridical verbs, (c) the (un)availability of pair-list readings in multiple *wh*-structures, and (d) their interaction with other quantifiers. These differences, and the particular properties they imply for *wh-the-hell*, follow directly only if we assume that *wh-the-hell* is a polarity item (PI).

1.1 Negative Answers with Modals

Consider the following examples, which differ minimally from (1) in that they contain a modal:

- (2) a. Who would buy that book?
- b. Who the hell *would* buy that book?

Example (2a), with the regular *wh*-phrase *who*, is still interpreted as an information question, soliciting an answer like *Ariadne*. (2a) can also have an—arguably less salient—negative rhetorical reading anticipating an answer like *Nobody would buy that book*. The interrogative with *who the hell* in (2b), on the other hand, cannot be used as a genuine information question in this context. Rather, such a question is compatible only with the negative rhetorical answer. Negative rhetorical readings of this kind are observed crosslinguistically in the languages that possess *wh*-phrases equivalent to *wh-the-hell*, including Spanish (Lee 1994), French (Obenauer 1994), Hungarian, and Greek. Crucial to the licensing of negative rhetorical readings is the presence of a modal. With episodic (simple past) tense, as in (1b), there is no anticipation of a negative answer.

¹ Constituent questions seem to presume positive answers, but they can also felicitously prompt answers like *Nobody* (though such answers are less likely, given the questioner’s anticipations). Negative answers of this kind are compatible with the idea that we pursue here that regular *wh*-words draw their values from a discourse-familiar set of values (section 2.2); see also Groenendijk and Stokhof 1997 for more discussion.

In licensing negative answers, *wh-the-hell* phrases are similar to the negative polarity items (NPIs) known in the literature as *minimizers*: for example, *give a damn, sleep a wink, lift a finger*.

- (3) Who could sleep a wink with that racket?

It has often been observed that questions with minimizers are rhetorical questions requiring negative answers (see Linebarger 1980, Progovac 1994, Giannakidou 1998, 1999). For example, like (2b), the interrogative in (3) can only be read as requiring a negative answer; that is, it can be felicitously answered only by a sentence like *Nobody could sleep a wink with that racket*. The fact that *wh-the-hell* has this reading, too, clearly indicates a parallel with minimizer NPIs.

Other PIs, like *any*, “weaker” than minimizers, also allow negative answers with modals and disallow them in the absence of a modal.²

- (4) a. Which student read any of the papers? [information question]
 b. Which student would read any of the papers? [negative answer preferred]

While (4a) seeks an informative answer like *Ariadne*, the information reading of (4b), with *would read*, is considerably suppressed (if not completely lost), and a negative rhetorical reading arises even with *any*. This exactly parallels the pattern found with *wh-the-hell*. Given that minimizers, unlike *any*, license exclusively negative rhetorical readings even with episodic tense (e.g., the only felicitous answer to *Who slept a wink with that racket?* is still *Nobody*), *wh-the-hell* seems to be closer to *any* than to minimizers in this respect.

In this connection it is worth pointing out that the effects of episodic tense and modality observed here (which we will further explore in conjunction with the semantics of *wh-the-hell* in section 2.2) indicate that structural conditions of the type discussed in Han and Siegel 1996 (e.g., whether *any* c-commands the *wh*-trace or not) are not by themselves sufficient for determining the (un)availability of rhetorical readings with PIs in questions.

1.2 Wh-the-Hell in the Complement of Veridical Predicates

The second argument for the PI status of *wh-the-hell* arises from the distribution of *wh*- and *wh-the-hell* in the complement of verbs like *know*. While (5a) is perfect, (5b) is ungrammatical. Interestingly, however, negating the matrix clause in (5b) yields a well-formed result, given in (6b).

- (5) a. I know who would buy that book.
 b. *I know who the hell would buy that book.
 (6) a. I don’t know who would buy that book.
 b. I don’t know who the hell would buy that book.

² The PI literature often distinguishes among weak, strong, and superstrong PIs (see Zwarts 1993, van der Wouden 1994, and Giannakidou 1998, 1999). The notion of strength relates to how “negative” (if at all) the PI licenser must be. The more negative the licenser is, the stricter the distribution becomes. The distinction between types of PIs does not seem crucial for present purposes, so we will ignore it in what follows, referring to polarity items collectively as *PIs*. See section 2 for some additional discussion.

This is not an isolated quirk of *wh*-questions embedded under (*don't*) *know*: the pattern can be replicated with other verbs, like *tell* and *confirm*, as in (7) and (8). Once again, negation is a requirement for the legitimacy of *wh-the-hell* in the embedded question.

- (7) a. He {told me/confirmed/realized} who had spread those horrible rumors about me.
b. *He {told me/confirmed/realized} who the hell had spread those horrible rumors about me.
- (8) a. He didn't {tell me/confirm/realize} who had spread those horrible rumors about me.
b. He didn't {tell me/confirm/realize} who the hell had spread those horrible rumors about me.

The role played by negation in (6b) and (8b) once again cues a comparison between the distribution of *wh-the-hell* and PIs. Factive and assertive verbs like *know*, *tell*, and *confirm* are veridical and do not license PIs in their scope, that is, in their c-command domain (Giannakidou 1998, 1999). But the insertion of negation provides the required nonveridical c-commanding element that PIs depend upon for grammaticality. Thus, while (9a) is ungrammatical, negative (9b) is perfect; the same contrast turns up in (10).

- (9) a. *John knew that Martha bought any book.
b. John didn't know that Martha bought any book.
- (10) a. *He told me that anyone was spreading horrible rumors about me.
b. He didn't tell me that anyone was spreading horrible rumors about me.

The examples in (9) and (10) perfectly match the corresponding cases with *wh-the-hell*.

The distributional parallel between *wh-the-hell* and PIs goes much further than this. In (11)–(15) we illustrate that, just like *any*, *wh-the-hell* is licensed in other typical PI environments such as the complement of interrogative and directive verbs like *wonder* and *would like*, complements of negative verbs like *refuse*, the scope of *only* and negative quantifiers like *nobody*, and the protasis of conditionals.

- (11) a. I {am wondering/would like to know} who the hell bought that book.
b. I {am wondering/would like to know} if anyone bought that book.
- (12) a. John refused to tell me who the hell had bought that book.
b. John refused to tell me if anyone had bought that book.
- (13) a. Only John knows who the hell wrote this secret report.
b. Only John knows whether anyone is aware of this secret report.
- (14) a. Nobody knows who the hell wrote this secret report.
b. Nobody knows whether anyone is aware of this secret report.
- (15) a. If John knows who the hell wrote this secret report, he should tell us now.
b. If you see anybody, let me know.

To the extent that the distributional link between PIs and *wh-the-hell* is testable,³ we find that it is systematically confirmed.

The above facts, in conjunction with the parallelism we noted regarding the licensing of negative answers, make it quite attractive to treat *wh-the-hell* as a PI. Before proceeding with our analysis, we would like to briefly point out two more interpretive differences between regular *wh*-phrases and *wh-the-hell* that further support the PI status of the latter.

1.3 The Unavailability of Pair-List Readings

Unlike regular *wh*-phrases, *wh-the-hell* phrases do not support pair-list readings in multiple *wh*-structures. This contrast, attested crosslinguistically, is illustrated in the following pair from English:

- (16) a. Who is in love with who? [single-pair echo *or* pair-list]
 b. (?)Who the hell is in love with who? [single-pair echo *only*]

(16a) supports both a single-pair echo reading and a pair-list interpretation, the latter corresponding to an answer pairing a discourse-given set of individuals in the *be-in-love-with* relation: for example, *John is in love with Ariadne, Bill is in love with Julia, Frank is in love with Zoë. . .*. The sentence can also be interpreted as an echo question, in which case the appropriate answer would be only one such pair, previously mentioned in the discourse.⁴ To the extent that it is acceptable, (16b) lacks the pair-list reading and can only be interpreted as a single-pair echo question. The specific failure of pair-list readings for multiple *wh*-questions featuring *wh-the-hell* will be shown to follow directly from its PI status in section 4.2.

1.4 Interaction with Quantifiers

Unlike regular *wh*-phrases, *wh-the-hell* phrases seem to have fixed scope with respect to quantifiers (an observation that goes back to Lee 1994:10).

- (17) What did everyone buy for Max?
 (18) What the hell did everyone buy for Max?

(17) has the two readings shown in (19), but (18) has only the one shown in (19b), where the universal quantifier takes narrow scope with respect to *wh-the-hell*.

- (19) a. $\forall x$, what is the thing y such that x bought y for Max?
 b. What is the thing y such that $\forall x$, x bought y for Max?

³ Obviously, we cannot check whether *wh-the-hell*, like *any*, is grammatical in nonveridical environments such as unembedded yes/no questions, modal predicates, or imperatives, for entirely independent reasons.

⁴ That English multiple *wh*-questions cannot receive a single-pair answer without any further ado is well known (see, e.g., Wachowicz 1974, Bošković 1998, and references cited in the latter). Echo intonation usually facilitates (even enhances) a single-pair interpretation, however. We return to this in section 4.2.

In reading (19a) the universal quantifier takes scope over the *wh*-word, and the things that were bought for Max vary from one person to another. In reading (19b), where it is the *wh*-word that takes wide scope, there is one thing that was bought for Max by all persons. (18) has only the latter reading. If we assume that the licensing of *wh-the-hell* in root questions involves the question operator in C (as we do in section 3), this scope restriction can be interpreted as an intervention effect, quite common with PIs: no quantificational element should intervene between the PI and its licenser. We take up this issue in more detail in section 4.4.⁵

1.5 Conclusion and Road Map

The facts surveyed in the previous sections strongly confirm that it is desirable in many ways to treat *wh-the-hell* phrases as PIs. Earlier works (e.g., Horn 1972:149, Lee 1994) have occasionally alluded to a possible link between polarity and *wh-the-hell* phrases. However, this link has never before been made as directly and explicitly as it is here.⁶

To develop this link in detail, we will proceed as follows. In section 2 we address the core issue of polarity sensitivity by linking the lexical semantics of *wh-the-hell* to its PI status. We show that *wh-the-hell* exhibits the core features of PIs characterized in the literature as dependent, supporting its analysis as a PI. We further identify two lexical properties of *wh-the-hell* that are responsible for its aggressively non-D-linked character and the special readings with episodic tense and modals: domain extension and a presupposition of negative attitude. In section 3 we consider the root/nonroot asymmetry in the licensing of *wh-the-hell* from the PI perspective. The account of the syntactic licensing of *wh-the-hell* prompts a fresh look at the syntax of *wh*-movement in English and in general. In section 4 we show that certain tantalizing puzzles relating to *wh-the-hell* (in particular, the fact that it is not grammatical in situ, that it only allows single-pair echo readings in multiple *wh*-structures, and that it fails to scopally interact with quantifiers) are readily solved if *wh-the-hell* is analyzed as a PI. In section 5 we summarize our main conclusions.

2 Polarity Items and the Semantics of Being Aggressively Non-D-Linked

The theory of polarity developed in Giannakidou 1998, 1999, 2001, provides the appropriate context for formulating our central hypothesis that *wh-the-hell* is a PI. This theory has two main

⁵ A related fact, observed in Lee 1994, is that in argument *wh-the-hell* questions no *any*-NPIs can be licensed in subject position (**Who the hell did anyone see?*). This also follows as an intervention effect, as we show briefly in footnote 31; see also Den Dikken and Giannakidou 2001.

⁶ Lee's (1994) account postulates a (phonologically unrealized) NegP (or a polarity licensing operator in the C domain) in the syntactic structure of questions with *wh-the-hell*, thereby licensing *wh-the-hell* via a specifier-head relationship. Viewed this way, the licensing of *wh-the-hell* is reduced to a negative concord configuration in the sense of Haegeman and Zanuttini (1991); Lee's approach thus contrasts with ours, which claims that *wh-the-hell* phrases are PIs that must be licensed *under c-command*. A fundamental problem with Lee's account that precludes any further implementation is that it is impossible to justify a NegP in rhetorical questions, since, as we argue in section 2.2, in these questions the negative answer is not *asserted* but *presupposed*. It also seems redundant to postulate a polarity phrase, since true questions contain a question operator whose existence is motivated semantically anyway; it is the type-shifter to the question meaning (for additional discussion, see section 3).

features: (a) It proposes that the semantic source of polarity phenomena in natural language is sensitivity to the property of (non)veridicality or subproperties thereof. (b) It emphasizes that polarity conditions should not be treated as composition-external filters on LF representations with PIs; rather, they should be derived from the lexical semantics of the PIs themselves. The second point is particularly important because it makes polarity look less “special,” and it implies that unlike in earlier accounts (see, e.g., Ladusaw 1979, Zwarts 1986) one need not stipulate a “polarity module” in order to explain why PIs obey the kind of constraints they do.

In this framework the core semantic ingredients of being “aggressively non-D-linked”—the label coined by Pesetsky (1987) to characterize *wh-the-hell* phrases—render these phrases excellent candidates for being analyzed as PIs. Their indefinite nature and the fact that they are not linked to discourse-familiar values bring them very close to the class of PIs identified as *dependent*. In order to support this conclusion, we will first outline the basic aspects of Giannakidou’s theory that are relevant here.

2.1 Varieties of Polarity and the Issue of Sensitivity

In Giannakidou 1998, 1999, 2001, PIs are defined as expressions whose distribution is restricted by (non)veridicality.

(20) *Polarity item*

A linguistic expression α is a polarity item iff:

- a. The distribution of α is limited by sensitivity to some semantic property β of the context of appearance; *and*
- b. β is (non)veridicality, or a subproperty thereof: $\beta \in \{\text{veridicality, nonveridicality, antiveridicality, modality, intensionality, extensionality, episodicity, downward entailtingness}\}$

Generally, an operator is veridical iff it entails the truth of the proposition it embeds: $[\text{Op } p] \rightarrow p$ (see also Zwarts 1995), and nonveridical if it does not: $[\text{Op } p] \nrightarrow p$. The truth entailment is always relative to an individual’s epistemic model, but the details are immaterial here.

Simplifying somewhat, the set of properties subsumed under (non)veridicality is presented as a closed set in (20b) in order to cover the distinct (but to a significant extent overlapping) PI paradigms that have thus far been identified in the literature—for example, NPIs, affective PIs, free choice items (FCIs), intensional PIs, positive PIs (PPIs). Other properties can be added, and multiple sensitivities are also allowed. The definition in (20) is intended as a heuristic format in order to capture the distributions of the various PI paradigms, and from it, various licensing and antilicensing conditions can be derived. Negative and downward-entailing operators are proper subsets of the nonveridical operators; hence, in this system we predict sensitivity to negation or downward entailment, while allowing for sensitivity to nonnegative and nonmonotone properties like intensionality and modality, which exemplify the more general case of nonveridicality. The distribution of positive PIs is also captured: PPIs are PIs favoring veridical—in particular, positive affirmative—contexts. Excluding PPIs, there is one distributional constraint that all the PI para-

dixms must obey in order to qualify for PI status: they must be inadmissible in the scope of veridical operators. As we have shown, *wh-the-hell* obeys this core constraint.

Sensitivity to nonveridicality is not stipulated in this theory, but is made to follow from the lexical semantic properties of any given PI paradigm. PIs are sensitive in that they come, so to speak, with a lexical semantic “deficit.” For a sentence containing a PI to be interpreted, the lexical semantic requirement of the PI, relating to this deficit, must be satisfied. If this requirement is not satisfied, the sentence containing the PI cannot be interpreted and will therefore be ruled ungrammatical (for more discussion of uninterpretability resulting in ungrammaticality, see Giannakidou 2001, specifically for polarity, and Ladusaw 1986 and Heim and Kratzer 1998 for general issues).

The semantic deficit varies from one PI class to the next, of course, and different “deficits” result in different distributions. In the case of *wh-the-hell* phrases, we may conjecture that *the-hell* and its variants are the morphological locus of the semantic “deficit.” Of course, this is not to say that *the-hell* by itself is a PI. It has been noted (Obenauer 1994) that *the-hell* also occurs on its own,⁷ in the absence of a *wh*-constituent, and that in such contexts it does not seem to be a PI: compare *I told him to get the hell out of here* with **I told him to get out of any office*. What we are saying is that *the-hell* is the locus of the polarity deficit, but the whole *wh-the-hell* phrase is a PI. The parallel with minimizer NPIs like *budge an inch, sleep a wink, lift a finger* is instructive: it is specifically the presence of the particular indefinite (*an inch, a wink, a finger*) that is responsible for the minimizer reading (*budge some inches* and *lift two fingers* are not PIs), but it is the combination of the indefinite *and* the verb that is polarity sensitive as a whole.

In some cases PIs can even be licensed by a negative implicature in the absence of an overt nonveridical trigger, like *any* in the complement of a negative factive verb. Note the contrast with the Greek PI *kanenas*, which cannot be licensed this way.

- (21) a. {I’m surprised/*I’m glad} she has any friends.
 Negative implicature with *surprise*: I didn’t expect her to have any friends.
 b. {*Ekplisome/*Xerome} pu exi kanenan filo.
 be-surprised/be-happy that has any friend

Factive predicates are veridical and are not expected to license PIs, as is the case in Greek. In English, however, *any* appears to be acceptable as long as the factive verb licenses a negative implicature. Linebarger (1980) argues that it is this property of negative factives that makes them legitimate triggers for *any*. Licensing by a negative implicature is called “indirect licensing” in Giannakidou 1999 and is arguably a more marginal option: there are no PIs that are licensed *only* by a negative implicature. *Any* is in this sense a “weaker” PI than *kanenas*; and there are PIs even weaker than *any*—for example, *at all*, which appears to be fine even with positive factives.

- (22) I’m glad she talked to me at all.

⁷ *On earth*, on the other hand, cannot. Obenauer notes other differences as well between *the hell* and *on earth*, which we will gloss over here.

In fact, Kadmon and Landman (1993) claim that even *any* can be licensed in the context of a positive factive as in *I'm glad we got ANY tickets*, where *any* is heavily stressed.

We need not go into the details here; we simply want to point out that our claim that *wh-the-hell* is a PI should be evaluated against this general picture, which may include licensing by a negative implicature as a possible option. And as a matter of fact, it turns out that *wh-the-hell* can also be sanctioned this way in cases like the following, involving focus.⁸

(23) a. (Even) JOHN knows who the hell wrote this report.

Negative implicature: Nobody else knows who wrote this report (without *even*)/

There's no one who doesn't know who wrote this report (with *even*).

b. NOW I know who the hell stole my car.

Negative implicature: I did not know before.

In these examples the focus structure imposes a set of alternatives, and this in turn yields the indicated negative inference sanctioning *wh-the-hell*. It is not crucial to the discussion what the proper treatment of these cases should be; for our purposes it suffices to observe that *wh-the-hell* behaves like other PIs in this respect, thus providing additional evidence for our hypothesis.

Within this general context, we set out to identify *wh-the-hell* as a novel PI paradigm. As a *wh*-paradigm, *wh-the-hell* is also related to a family of polarity-sensitive *wh*-items captured in the literature under the rubric of 'ignorance' or 'indifference' markers, such as English *whoever* (see Tredinnick 1996, Horn 2000, von Stechow 2000), and free choice items with *wh*-morphology in various languages, such as Dutch (Rullmann 1996), Hindi (Dayal 1997), Catalan and Spanish (Quer 1998, 1999), French and Greek (Giannakidou 1998, 2001). A detailed comparison of *wh-the-hell* and these other *wh*-PIs is beyond the scope of this article.⁹

2.2 The Semantics of Wh-the-Hell

2.2.1 *Wh-the-Hell as a Dependent Polarity Item* Giannakidou (1998:69–71, 138–140, 2001) identifies a particular class of PIs as *dependent* indefinites. PIs like Greek *kanenas* and English *any* are such PIs. (We set aside the possibility of free choice here.) Dependent indefinites are just like regular Heim-style indefinites in contributing a predicate and a variable, but differ from them

⁸ The examples in (23) were brought to our attention by Richard Kayne and an anonymous reviewer; recall from section 1 that the unfocused examples with *know* are ungrammatical. In the context of (23), the following observation concerning Hungarian (made to us by Anna Szabolcsi, and confirmed with other speakers) is relevant. Unlike English *know*, the Hungarian verb *tud* is ambiguous between a stative ('have knowledge') and an eventive ('find out') reading. On the latter interpretation of *tud* (but not on the former), the Hungarian counterpart of English **I know who the hell bought that book* is acceptable. This fits in very nicely with our overall approach: the eventive ('find out') reading licenses a negative inference ('I did not know before'); the stative ('have knowledge') reading, on the other hand, is veridical and blocks the licensing of *wh-the-hell*.

⁹ We should mention, however, that there are certain differences in distribution between FCIs and *wh-the-hell*, emanating from the distinct lexical semantic properties associated with free choice. For example, FCIs are altogether incompatible with episodic tense—whereas *wh-the-hell* is fine in such an environment, as noted in section 1—because they encode a presupposition of variation that is not satisfied in episodic contexts (see especially Giannakidou 2001, for discussion and formalization). *Wh-the-hell* does not carry such a presupposition; hence, it does not exhibit such sensitivity to episodicity, being admissible in episodic questions.

in that they cannot assert existence. Technically, this means that, unlike that of their non-PI counterparts, the variable of dependent indefinites cannot be bound by a default existential quantifier at the text or sentence level.

(24) *Dependent indefinites*

An indefinite NP of the form $P(x)$ is dependent if its variable x cannot undergo \exists -closure at the top (sentence) level.

This definition implies that dependent indefinites can only be existentially closed at the VP level, which fleshes out the observation that they always take narrow scope (Giannakidou 1997). Note that narrow scope does not entail narrowest scope, as dependent indefinites can still interact with other scope-bearing elements at the VP level. As an illustration, consider the following pair:

(25) *Any student left.

(26) A student left.

- (27) a. $\llbracket \text{a student} \rrbracket = \text{student}(x)$
 b. $\exists x [\text{student}(x) \wedge \text{left}(x)]$

Following Heim (1982), we assume that in (26) the variable contributed by the indefinite undergoes text-level existential closure and is thus bound by a default existential quantifier. The truth of (26) is evaluated in the standard way; that is, the sentence is true in a model iff there is at least one individual $d \in D$, where D is the domain of individuals, such that d is the value of x under g , and d is a student and d left. The ungrammaticality of *any* suggests that its variable cannot be bound by a default existential quantifier. This is *any*'s lexical deficit, responsible for restricting its distribution. Since dependent indefinites come with this deficit, sentences containing them cannot be interpreted in positive affirmative sentences and are thus ruled out: dependent indefinites are forced to be bound by the default existential but they cannot be so bound in these sentences. In negative episodic sentences or in questions, however, existential closure can apply because there is some nonveridical operator above the existential, namely, negation and the question operator. As a result, sentences with dependent indefinites can be interpreted (and hence are well formed) under negation, the question operator, and other nonveridical operators.

Wh-the-hell phrases appear to be dependent in the same way: as *wh*-words, they can be analyzed as indefinites, and they do not assert existence.¹⁰ This is why *wh-the-hell* phrases are not possible in positive veridical sentences but are fine under the question operator, negation, and other nonveridical triggers, as noted in section 1. *The-hell* contributes two additional characteristics that further restrict the set of possible interpretations of the sentences it occurs in: domain extension and negative attitude, to be discussed next. It is these two properties, we argue, that being aggressively non-D-linked boils down to, and that grant *wh-the-hell* its particular PI status, as opposed to other *wh*-words and PI paradigms.

¹⁰ Though regular *wh*-words presuppose some form of it, which is why they do not qualify for PI status; see the discussion in section 2.2.2.

2.2.2 *Additional Lexical Features: Domain Extension and Negative Attitude* As just noted, *wh*-terms translate into existential quantifiers or indefinites in a Karttunen-style semantics (Karttunen 1977, Heim 1994; see also Berman 1991), as in (28). In this semantics a question, the semantic value of an interrogative sentence, is a set of propositions consisting of its true answers.¹¹ So the single *wh*-question in (28a) denotes the set of propositions of the form “*x* left,” where *x* is a person. The condition $p(w)$ ensures that only true propositions are considered.¹²

- (28) a. Who left?
 b. $\llbracket \text{who} \rrbracket(w) = \llbracket \text{somebody} \rrbracket(w) = \lambda Q \exists x [\text{person}(x)(w) \wedge Q(x)(w)]$
 (after \exists -closure under the question operator)
- (29) a. $\llbracket \text{who left} \rrbracket(w) = \lambda p \exists x [p(w) \wedge \text{person}(x)(w) \wedge p = \lambda w (\text{left}(w)(x))]$
 b. $Q = \{\text{Bill left, Roxanne left, Zoë left}\}$

If Bill, Roxanne, and Zoë left in the actual world, then the set indicated in (29) contains the three propositions shown in (29b); these each represent partial answers to the interrogative, and according to Karttunen, they “jointly constitute its true and complete answer” (1977:20).

Likewise, when a sentence includes a D-linked *wh*-phrase like *which students*, the *wh*-phrase translates into an existential/indefinite. There is, however, an additional feature of regular *wh*-phrases (including D-linked and partitive ones) that sets them apart from *wh-the-hell*: they are *presuppositional*. Consider:

- (30) a. Which students talked to Ariadne?
 b. Which of the books did Ariadne buy?

In the most reasonable interpretation of (30a), *which students* will pick up its value not from the set of students in the universe, but from some set of students familiar from the previous discourse; likewise, in (30b) the partitive *which of the books* is linked to a unique set of books whose existence is established in the previous discourse, and the questioner wants to know which book in that set is such that Ariadne bought it. This means that regular *wh*-determiners and quantifiers are interpreted only against nonempty domains like presuppositional determiners and quantifiers.¹³

- (31) *Presuppositionality of determiners and quantifiers*
 A determiner/quantifier δ is presuppositional iff for all $A, B \subseteq D$, if $A = \emptyset$ then $\langle A, B \rangle \notin \text{Dom}(\delta)$.
 (based on Heim and Kratzer 1998:163)

The presuppositional character of (30a) is illustrated in (32).

¹¹ Alternatively, a question is treated as the proposition corresponding to its actual answer, that is, a set of possible worlds, as in Groenendijk and Stokhof 1984. We do not discuss the differences here, but we should note that nothing crucial hinges on our decision to cast the discussion in Karttunen’s terms. In fact, our claim that *wh-the-hell* is a dependent item can be implemented directly in Groenendijk and Stokhof’s semantics since in this semantics the *wh*-term does not contribute an existential quantifier anyway, but a variable bound by the question operator in a formula of the form $?x P(x)$.

¹² An extensional language is used, where explicit variables stand for possible worlds; when w is free, its value is the actual world, as in $p(w)$.

¹³ Strictly speaking, the quantifier is the combination of the determiner with the noun (the A-argument), but we will put things in more general terms here.

- (32) $\llbracket \text{Which students talked to Ariadne?} \rrbracket(w)$
 a. presupposes: that there exists a set of students $X \subseteq D$: $\exists X \text{ student}(X) (w)$
 b. denotes: $\lambda p \exists x \in X [p(w) \wedge \text{student}(x) (w) \wedge p = \lambda w (\text{talked}(x) (\text{Ariadne}) (w))]$

Even if this question is answered negatively, *No student talked to Ariadne*, the presupposition survives that there is a discourse-familiar set of students; it is simply asserted that none of these students talked to Ariadne (see also footnote 1).

Presuppositional determiners and quantifiers are veridical, as is clear from the definition in (33), from Giannakidou 1998.

- (33) *(Non)veridicality of determiners and quantifiers*
 A determiner/quantifier δ is veridical with respect to its NP argument iff it holds that $\llbracket \delta \text{ NP VP} \rrbracket = 1 \rightarrow \llbracket \text{NP} \rrbracket_c \neq \emptyset$; otherwise, δ is nonveridical.

Since regular *wh*-words exhibit the properties of veridicality and presuppositionality, it is expected that they cannot be used as PIs. *The-hell* is incompatible with D-linked *wh*-phrases (cf. **which* $\langle \text{the hell} \rangle$ *student* $\langle \text{the hell} \rangle$, **which* $\langle \text{the hell} \rangle$ *of the books* $\langle \text{the hell} \rangle$),¹⁴ indicating that *wh-the-hell* is not presuppositional or veridical and can be interpreted even if the *wh*-domain is empty. It is thus readily expected that *wh-the-hell* phrases can be used as PIs.

Presuppositionality couples naturally with familiarity in regular *wh*-words. The notion of familiarity we assume here is that defined in Heim 1982:

- (34) *Novelty/Familiarity* (Heim 1982:307–311)
 Let F be a file, S a sentence uttered against F , and $\text{Dom}(F)$, reading as ‘the domain of F ’, the set that contains every number which is the number of some card in F :
 a. An occurrence of an NP_i in a logical form (LF) is novel with respect to F if its index i is such that $i \notin \text{Dom}(F)$.
 b. An occurrence of an NP_i in LF is familiar with respect to a file if its index i is such that $i \in \text{Dom}(F)$.

Regular *wh*-words are always linked to discourse-familiar values in the above sense, but *wh-the-hell* differs in this respect.¹⁵ This becomes visible when we construct a context that forces an interpretation of *wh-the-hell* anaphoric to a previously introduced discourse referent.

- (35) Someone_i bought that book. John knows {who_i/**who the hell*}.

In this example *who* can be linked to *someone* in the previous sentence and it therefore provides

¹⁴ We believe it is safe to make this generalization, despite Pesetsky’s (1987) note that while **which the hell book* is bad, *what the hell book* may be good (see also Merchant, to appear, for support for this judgment). To the extent that it is acceptable (Obenauer (1994:399, fn. 11) notes that it is often rejected in British English, but we have found that many American English speakers dislike it as well; for more discussion, see Obenauer 1994, including data from French), *what the hell book* is semantically equivalent not to the presuppositional *which book* but to the nonpresuppositional, kind-referring *what kind of book*, a fact that supports precisely what we say in the text.

¹⁵ Regular *wh*-phrases, then, behave like indefinites in the sense that they bear a novel referential index (in Heim’s system), but their descriptive content seems to be presupposed, and in this respect they are reminiscent of definites.

a well-formed sluice. *Who the hell*, on the other hand, cannot be linked to the discourse-familiar *someone* (see Merchant 2001 for more discussion on the impossibility of sluicing with *wh-the-hell*). This fact follows if we assume that *wh-the-hell* does not carry an index familiar in the sense of (34)—which is consistent with the characterization ‘‘non-D-linked.’’ The observation we make later (section 3) that *wh-the-hell* phrases cannot be used as topics squares directly with this conclusion.

We are now in a position to formulate the precise contribution of *wh-the-hell*. When attached to a *wh*-word, the modifier *the-hell*, we argue, extends the domain of quantification to include familiar and novel values. This we call *domain extension*. As a result of domain extension, the domain of quantification for *wh-the-hell* is the entire domain *D*, and not just a presupposed subset of it, as with regular *wh*-words. Additionally, *the-hell* conveys a presupposition that the speaker has a negative attitude toward the value of *wh-the-hell* and the propositional content of the *wh*-question.

As an illustration, consider the following question:

(36) Who the hell talked to Ariadne?

The domain of *who the hell* is the open set including all persons in the universe, and all possible values are available for *x*, even less likely or prototypical ones.

(37) $\llbracket \text{Who the hell talked to Ariadne?} \rrbracket(w) =$
 $\lambda p \exists x \in D [p(w) \wedge \text{person}(x)(w) \wedge p = \lambda w (\text{talked}(x)(\text{Ariadne})(w))]$

Understood this way, domain extension is reminiscent of Kadmon and Landman’s 1993 *widening*, and it gives rise to a scalar statement. PIs crosslinguistically are known to exhibit this property of domain extension or widening (cf. *any* and FCIs); hence, the fact that it is observed with *wh-the-hell* as well is readily expected under the present analysis.

Additionally, *wh-the-hell* contributes a negative presupposition of the form shown in (38). This presupposition expresses a negative attitude on the part of the speaker.

(38) *Presupposition of negative attitude of wh-the-hell*
 In the actual world *w*: If $\exists x [P(x)(w) \wedge Q(x)(w)] \rightarrow \text{SHOULD} \neg Q(x)(w)$, for all possible values of *x*.
 (where *x* is the variable of *wh-the-hell*, *P* is the property denoted by the *wh-the-hell* phrase, and *Q* is the property denoted by the VP)

This presupposition is a modalized conditional statement saying that if any *x* such as *x* did what is expressed by the VP, then *x* should not have done it. First, it conveys uncertainty about whether there will be a value for *x* such that the property of the VP can be ascribed to it; in this respect *wh-the-hell* is rendered equivalent to *any*, as just indicated in our paraphrase. Second, it conveys the proposition that if there is indeed an *x* that did what the VP says, then *x* did something that should not have happened. In (36) the speaker presupposes that if indeed somebody has talked to Ariadne, that should not have happened, because Ariadne was not supposed to be talked to: she was punished, for instance, and nobody was supposed to talk to her.

(39) *Negative attitude of (36)*

If there is a person x in w , and x talked to Ariadne in w : x should not have talked to Ariadne in w .

It is the presence of this proposition that gives rise to the “surprise” reading. Because we are dealing with an episodic sentence, we consider only the possible values of x in the actual world (the w variable is free). Independently of the negative attitude, *wh-the-hell* can still be assigned a value—say, Frank—and then it holds that Frank should not have talked to Ariadne.

We can now go back to our original observation that *wh-the-hell* questions with modals are rhetorical questions requiring negative answers. We will treat negative rhetorical questions as questions presupposing their negative answers (cf. analyses of rhetorical questions as equivalent to declaratives, e.g., Sadock’s (1971) “queclaratives”). Presupposing its negative answer means that the denotation of the rhetorical question is a singleton set containing just the negative proposition.

It is easy to see how the negative answers arise with modals. Recall our original example:

(40) Who the hell would buy that book?

This is a case of explicit quantification over possible worlds because the modal *would* itself introduces a set of possible worlds, that is, its modal base K (Kratzer 1981). Domain extension works as usual. But because this sentence has an overt modal, the negative attitude is slightly different: (a) there is no need for modality in the negative attitude, and (b) the negative attitude will have to be relativized to the worlds in the modal base. Because the modal *would* expresses necessity (corresponding to *must*), it translates into a universal quantifier. This means that the negative presupposition must hold in *all* worlds in the modal base K .

(41) *Presupposition of negative attitude of wh-the-hell with a modal*

$\forall w \in K [P(x)(w) \rightarrow \neg Q(x)(w)]$, for all possible values of x .

(where x is the variable of *wh-the-hell*, P is the property denoted by the *wh-the-hell* phrase, and Q is the property denoted by the VP)

(42) *Negative attitude of (40)*

$\forall w \in K$: If there is a person x in w , then x does not buy that book in w .

But now, the world variable is bound by the universal quantifier corresponding to *would* (which also binds the x -variable of *wh-the-hell*), and we end up with a situation where in each world w in K , it holds that if x is a person, then x does not buy that book in w . Effectively, we end up with a situation where in no world w would anybody buy that book, which is precisely the negative rhetorical reading we have observed.

To sum up the discussion in this section, we have proposed a semantics for *wh-the-hell* from which its status as a PI follows, and from which the “special” interpretation of questions with *wh-the-hell* can be derived. We have analyzed *the-hell* and its ilk as elements that induce domain extension and carry a presupposition of negative attitude, thus also explaining why negative rhetorical readings arise only in combination with modality.

3 The Licensing of *Wh-the-Hell* and the Syntax of *Wh*-Movement in English

Having established that *wh-the-hell* is a PI, we now consider the syntactic aspects of its licensing. In trying to provide a coherent account of how licensing proceeds in root and embedded clauses (section 3.1), we will make use of the insight that the position of *wh*-phrases is not uniform (cf. Pesetsky 1989 for English), fitting English into the larger crosslinguistic picture where it is evident that different languages treat the displacement of *wh*-constituents differently. We will show that our proposal has important implications for certain fundamental aspects of *wh*-movement, particularly in English (section 3.2).

3.1 *The Licensing of Wh-the-Hell in Root and Embedded Questions*

Recall the basic contrast noted in section 1, repeated in (43). The ungrammaticality of (43b) follows from the fact that *who the hell* lacks a licenser in this sentence, as we will make more explicit below. By the same token, however, it would seem that *who the hell* in (43a), which apparently occupies the highest specifier in the clause, cannot be licensed either.

- (43) a. Who the hell bought that book?
b. *I know who the hell bought that book.

3.1.1 Root/Nonroot Asymmetry and the Landing Site of Wh-Fronting We obviously would not want to say that *wh-the-hell* is a PI in embedded contexts but not in root contexts; a statement to that effect would render our entire approach null and void. Fortunately, there is no reason to retreat from the strong claim that *wh-the-hell* is a PI. For there is indeed a way of making sense of the contrast between (43a) and (43b) in keeping with our approach to *wh-the-hell*—one that capitalizes on an independent difference between root and embedded *wh*-questions in English, illustrated in (44) (examples taken from Pesetsky 1989).

- (44) a. ?A book like this, why should I buy?
b. ?Bill doesn't know why a book like this, he should buy.

As Pesetsky (1989) notes, in root *wh*-questions the topic (*a book like this* in (44)) surfaces to the left of the fronted *wh*-expression; but in embedded *wh*-questions the topic must follow the *wh*-phrase.¹⁶

There are at least two logical possibilities when it comes to analyzing the data in (44). One would be to keep the position of *wh*-phrases constant throughout all English *wh*-questions and to vary the position of topics (e.g., CP-adjoined in root contexts, IP-adjoined in embedded ones). An alternative, pursued by Pesetsky (1989), is to do exactly the opposite: to keep the position of topics constant, and to raise the *wh*-phrase to different positions in root and embedded *wh*-clauses.

¹⁶ Neither sentence in (44) is impeccable (Emonds (1976) originally starred combinations of topicalization and *wh*-movement in root clauses, in either order; see also Baltin 1985:155); but what matters for our purposes is that such sentences are passable and that they exhibit the word order asymmetry that they do. See also Baltin 1985:157 for examples from French (communicated to him by Marie-Thérèse Vinet and Paul Hirschbühler) that combine topicalization and *wh*-movement in nonroot clauses, where, as in English (44b), the topic follows the *wh*-phrase (*les hommes à qui les livres j'ai donné* 'the men to whom the books I have given').

We know from comparative work on *wh*-questions that languages differ with respect to where *wh*-phrases raise. It is certainly not the case that fronted *wh*-expressions systematically target [Spec, CP]. For instance, in Hungarian *wh*-clauses, whether root or embedded, *wh*-expressions raise to the position reserved for foci, which is relatively low in the structure, below topics and the complementizer *hogy*, as shown in (45) (cf. Brody 1995 and references cited therein). That *wh*-phrases front to [Spec, FocP] in Hungarian is evident not just from their placement vis-à-vis topics and complementizers, but also from their complementarity with non-*wh* foci in the same simple clause: (46a–b) are both ungrammatical because tautoclausal multiple focus movement is generally impossible (cf. É. Kiss 1987). (PV = preverb)

- (45) a. Mari *kit* hívott meg?
 Mari(TOP) who-ACC invited PV
 ‘Who did Mari invite?’
 b. Kiváncsi vagyok hogy Mari *kit* hívott meg.
 curious I-am that Mari(TOP) who-ACC invited PV
 ‘I wonder who Mari invited.’
 (46) a. **Kit* MARI hívott meg?
 who-ACC Mari(FOC) invited PV
 b. *MARI *kit* hívott meg?
 Mari(FOC) who-ACC invited PV

So it is clear that languages treat *wh*-movement differently. By contrast, the position of topics seems reasonably stable—at least in languages that do not mark their topics with a grammatical marker. We therefore opt for Pesetsky’s (1989) strategy when it comes to accounting for the difference between (44a) and (44b).

In particular, we argue that *wh*-movement in English targets [Spec, CP] in embedded clauses but [Spec, FocP] in root contexts. With FocP located below TopP and TopP in turn located below CP (as in Hungarian (45) and in other languages, perhaps universally), this gives the desired result that topics must precede *wh*-phrases in root clauses but will surface to the right of *wh*-expressions in embedded *wh*-questions. The result for (44), then, reads as in (47) (where in (47b) FocP in the embedded clause is suppressed; whether or not there is an intermediate touchdown in [Spec, FocP] on the way to [Spec, CP] in (44b) is discussed in section 3.2).

- (47) a. [_{CP} C [_{TopP} [a book like this]_i [_{Top} [_{FocP} [why]_j [_{should}_k [_{IP} I t_k buy t_i t_j]]]]]]]
 b. . . [_{CP} [why]_j [_C [_{TopP} [a book like this]_i [_{Top} [_{IP} he should buy t_i t_j]]]]]

3.1.2 The *Q* Operator and the Licensing of Wh-the-Hell in Root Questions While languages differ among and within themselves with respect to where *wh*-phrases move, arguably all “real” *wh*-questions, universally, feature a projection of C harboring the abstract *question operator* *Q* (going back at least to Katz and Postal 1964; see also Baker 1970, Bresnan 1972, Pesetsky 1987). *Q* operates semantically as the type-shifter taking a proposition as its input and yielding a question—that is, a set of propositions—as its output; it may be morphologically realized in

some languages (e.g., Japanese *ka* and Serbo-Croatian *li*). The question operator is thus responsible for the interrogative semantics of questions, including yes/no questions. In *wh*-questions in which no *wh*-phrase raises to [Spec, CP], the Q operator binds the *wh*-phrase in [Spec, FocP] under regular c-command, and this distinguishes the *wh*-focused constituent from other, non-*wh* foci.

The Q operator is nonveridical and known to license PIs in its c-command domain, in both yes/no and constituent questions.¹⁷

- (48) a. Does anybody here speak Kurdish?
b. Who has given anything to Bill?

This, coupled with the approach to English *wh*-movement reflected in (47), straightforwardly accommodates the licensing of *who the hell* in (43a): the *wh*-constituent is in [Spec, FocP]. In this position it finds itself c-commanded by the Q operator in CP, as indicated here:

- (49) [_{CP} C_Q [_{FocP} [_{who the hell}]_i [_{Foc} [_{IP} _{t_i} bought that book]]]]

So a *wh-the-hell* phrase in [Spec, FocP] is licensed via c-command by the nonveridical Q operator and is thereby perfectly licit.

3.1.3 Embedded Questions and the Distribution of the Q Operator In embedded clauses the situation is different. The facts in (44) suggest that an English *wh*-phrase raises to [Spec, CP] in embedded clauses, a position not c-commanded by any potential licenser inside the embedded CP. In this context, therefore, *wh-the-hell* could only be licensed by an external nonveridical licenser in the matrix clause. This is precisely the desired result for English. But even for languages like Hungarian, where *wh*-phrases move to a position lower than C in embedded clauses, this result emerges: the Hungarian veridical verb *tud* (on its stative ‘have knowledge’ reading; see footnote 8 for discussion of its alternative ‘find out’ interpretation) likewise disallows *wh-the-hell* in its complement in the absence of an external nonveridical licenser.

The reason why the licensing of *wh-the-hell* generally fails under veridical verbs like *know*—even in contexts in which it can be argued that *wh*-phrases are in a position lower than C—is that no local Q operator is present in the C head of the complement of these verbs. In line with a venerable tradition in the syntax and semantics literature (going back at least to Katz and Postal 1964, and more specifically to Munsat 1986, Berman 1991, Lahiri 1991, McCloskey 1992, and Adger and Quer 2001), we make a distinction between verbs that take real question complements (such as *ask*, *wonder*) and verbs that take “semiquestion” complements (including our veridical verbs). Real questions have a Q operator in C. That operator acts as a type-shifter taking a proposition as its input and delivering a set of propositions as its output. Verbs like *know*, on the other hand, select complements denoting propositions, not questions; hence, no type-shifting is necessary, and the Q operator is absent.

¹⁷ Note that PIs are not licensed uniformly across all kinds of *wh*-questions: for instance, **Why did anybody help us?* is ungrammatical (thanks to Richard Kayne for reminding us of these cases; see Lee 1994 for related examples). **Why did anybody help us?* is bad because it presupposes that somebody did indeed help us. This presupposition is a veridical inference and thus obstructs the successful licensing of *anybody*.

Munsat (1986) supports the idea that *wh*-complements “must be distinguished as containing two different complementizers at the deep structure level, . . . *wh-Q* and *wh-that*” (p. 191) with a variety of empirical contrasts between *know*- and *wonder*-type verbs, most notable among which is the licensing of PIs (recall the discussion in section 1.2). A particularly interesting case is the distribution of *if*-questions, recently discussed by Adger and Quer (2001). While *if* is impossible as a complementizer under veridical verbs like *admit*, *hear*, and *say*, which do not normally select *if*-complements—**Julie heard if the bartender was happy*—it becomes grammatical if the veridical verb is negated or embedded under a *Q* operator in root questions.

(50) Julie didn’t hear if the bartender was happy.

(51) Did Julie hear if the bartender was happy?

Adger and Quer argue that *if*-questions of this kind are not in fact the selected complements of the relevant verbs; rather, they are complements of a polarity determiner that is licensed when the appropriate polarity operator (e.g., a negation, *Q* operator, modal) is present. This makes *if*-questions very similar to *wh-the-hell* questions. Crucially, like *wh-the-hell* cases, *if*-questions exhibit a contrast too, between *know* and *wonder*: *if*-questions are grammatical under *wonder*, and ungrammatical under *know*.

(52) *Frank knows whether Julie heard if the bartender was happy.

(53) Frank wonders whether Julie heard if the bartender was happy.

Wonder-complements are similar to root questions, but *know*-complements clearly are not. The contrast between them further emphasizes the need to distinguish between the *wh*-complement of verbs like *know* and that of verbs like *wonder*. Only the latter qualifies as a real question; hence, only the latter features a *Q* operator in *C*.

3.1.4 Conclusion The facts showing that matrix negation is required for the licensing of embedded *wh-the-hell* in complements of veridical predicates now follow naturally. The contrast between veridical verbs like *know* and *tell* and nonveridical ones like *wonder*, *would like to know*, and *refuse*—compare the ungrammatical *wh-the-hell* cases in (9)/(10) with the grammatical ones in (11)/(12)—also follows as the (non)satisfaction of a polarity c-command condition. When *wh-the-hell* finds itself in the complement of *wonder*, *would like to know*, and *refuse*, on the other hand, the licensing condition is satisfied since *wh-the-hell* is in the c-command domain of its nonveridical licenser.¹⁸

¹⁸ In other words, we assume that licensing of *wh-the-hell* by the matrix negation is done *directly* and is not mediated by the embedded *C*—after all, the embedded *C* does not c-command the *wh-the-hell* phrase in its specifier. We thus have to distance our approach from Laka’s (1990) and Progovac’s (1994) *C*-mediated approaches. Motivation for these approaches is usually taken to come from the alleged unacceptability of PIs as NP complements of nonveridical verbs, a judgment that, upon closer scrutiny, is not empirically supported: crosslinguistically, PIs like *any* and FCIs (which are instantiations of PIs as well; cf. Giannakidou 1998, 1999) are perfectly acceptable as direct objects of nonveridical verbs (*John denied any accusation*). For additional evidence against the indirect licensing approach, see Branigan 1992:53ff. We thank Myriam Uribe-Etxebarria for discussion on these points.

3.2 Implications for the Theory of Wh-Movement

We now have an account of the root/embedded dichotomy with respect to the licensing of *wh-the-hell* in English, one that hinges on the hypothesis that *wh*-phrases front to [Spec, FocP] in root clauses and to [Spec, CP] in embedded questions. That hypothesis found support in the word order difference between root and embedded questions when it comes to the placement of topics vis-à-vis *wh*-phrases; but it is incumbent on us now to embed this hypothesis in a general theory of the syntax of *wh*-movement. This is what we will try to do in this section. A more detailed discussion of the general issues concerning *wh*-movement is beyond the scope of this article, and not necessary for our immediate goals; for a more complete picture, see Den Dikken 2001.

3.2.1 The Features of Wh-Phrases Let us start with the claim that *wh*-phrases front to [Spec, FocP] in English root questions. This is tantamount—in a theory (e.g., Chomsky 1995) in which all displacement is driven by morphological features—to the claim that *wh*-phrases may possess a “focus feature.”¹⁹ This focus feature is checked, in the overt syntax of English, against a matching focus feature under the functional head Foc. Movement is overt as a consequence of the fact that the focus feature is strong.²⁰

Alongside their focus feature [+foc], all *wh*-phrases possess the morphological feature [+wh]. It is this feature that is commonly held responsible for *wh*-movement, that is, attraction to [+wh] C. In languages like Hungarian the [+wh] feature in C does not manage to trigger movement of *wh*-constituents to [Spec, CP] in overt syntax—the [+wh] feature of Hungarian C is arguably weak (see Lipták 2001 for extensive arguments and for additional crosslinguistic data and references). For English the situation is more complicated. As noted, the [+wh] feature of English C ends up attracting the *wh*-constituent to its specifier position in embedded *wh*-questions but not in root *wh*-questions. Why is there such an asymmetry between root and embedded

¹⁹ This is not to say, of course, that *wh*-phrases *always* bear a focus feature. *Wh*-relative pronouns do not function as foci, as the syntax of Hungarian shows very clearly: while focus and *wh*-fronting do not go together in a simple clause in Hungarian, focus inside a relative clause is perfectly legitimate, as shown in (i) (adapted from Lipták 2001).

(i) Bejöhet [DP az [CP aki [FocP PÉTERT hívta meg]]].
 may-come-in that who Peter-ACC invited PV
 ‘(S)he who invited Peter may come in.’

So *wh*-relative pronouns do not front to [Spec, FocP]; they do not have a focus feature. Neither do the incarnations of *wh*-pronouns that function as indefinites, such as Dutch *wat* (Postma 1994, Bennis 1995) and a variety of German *wh*-pronouns. Of course, there is nothing extraordinary about this state of affairs: non-*wh* constituents likewise have the option of being focused or nonfocused; *wh*-phrases are no exception. What all *wh*-elements have in common is the feature [+wh]. But clearly, being [+wh] does not in any way entail being [+foc]. Nor does the mere possession of the feature [+wh] force overt displacement of a *wh*-constituent in a *wh*-movement language: indefinite *wh*-pronouns and echo *wh*-expressions do not front, nor do “inferior” *wh*-expressions in multiple *wh*-questions in non-multiple *wh*-fronting languages such as English.

²⁰ For English non-*wh* foci, displacement to [Spec, FocP] may be overt as well; see Kayne 1998 for potential arguments to this effect. To account for the fact that non-*wh* foci do not, as a rule, end up in clause-initial position in English, Kayne postulates overt remnant movement of the IP across the landing site of the focused constituent; in *wh*-questions, then, such remnant IP-fronting would have to be ruled out (see Den Dikken 2001). Alternatively, one may assume that non-*wh* foci move covertly, as in many traditional accounts (see Bayer 1996, Winkler 1997 for recent discussion), or do not move at all (Rooth 1985).

questions when it comes to the point in the derivation (pre- or post-Spell-Out) at which the [+wh] feature of interrogative C is checked?

3.2.2 The Root/Nonroot Asymmetry Explained The answer to this question is actually quite simple, if we employ Chomsky's (1995:234) characterization of the nature of strong features. In Chomsky's proposal the hallmark of a strong feature is the following (where *D* stands for *derivation* and α for a category with a strong feature):

(54) *D* is canceled if α is in a category not headed by α .

(54) can never be violated in cases where the strong feature is on the root node itself: there will never be any category *not* headed by α in such cases. In other words, Chomsky's outlook on strong features guarantees straightforwardly that no strong feature of the root C will ever be checked via overt displacement: overt displacement is not forced by (54), and therefore is not permissible (Procrastinate).

For English, then, what we can say is that the [+wh] feature of C is *strong* (throughout), which results in overt syntactic *wh*-movement in all contexts *except* the root CP.

- (55) a. The [+wh] feature of English interrogative C is strong.
 b. Overt category movement to [Spec, CP] is forced by (54) in all English interrogative CPs, *except* in root CPs, where (54) is inoperative.

This is precisely the desired result. It accounts for the distribution of *wh-the-hell* and at the same time confirms the approach to strong features built on (54).

While this takes care of the central issues about *wh*-movement that are relevant here, we still need to address one final question: Does the *wh*-phrase raised to [Spec, CP] in embedded *wh*-questions travel through [Spec, FocP], or does it go straight to [Spec, CP]? Though the issue is complex, the following considerations lead us to an answer: namely, that *wh*-fronting to [Spec, CP] does not proceed via an intermediate touchdown in [Spec, FocP].

3.2.3 Embedded Wh-Questions and Focus Negative inversion, illustrated in (56), arguably constitutes movement to [Spec, FocP]. And just like *wh*-fronting to [Spec, FocP] in root clauses, it triggers subject-auxiliary inversion. But negative inversion is much more radical in that respect than *wh*-fronting. While negative inversion *systematically* gives rise to subject-auxiliary inversion, no matter whether it takes place in root or embedded contexts, *wh*-fronting leads to inversion of subject and finite auxiliary only in root questions. (57b) contrasts sharply with (56b).

- (56) a. Under no circumstances {would he/*he would} do that.
 b. John said that under no circumstances {would he/*he would} do that.
 (57) a. What {would he/*he would} do?
 b. I wonder what {*would he/he would} do.

This suggests that *wh*-fronting in embedded clauses does not proceed through [Spec, FocP]. On the other hand, the incompatibility of *wh*-fronting and negative inversion in the same clause, in

root and embedded contexts alike, suggests that *wh*-fronting in embedded clauses does proceed through [Spec, FocP].²¹

- (58) a. *What under no circumstances should he do?
 b. *John wondered what under no circumstances should he do.

These facts generate two specific questions:

- (59) a. How do we prevent subject-auxiliary inversion in embedded *wh*-questions, if the *wh*-phrase travels through [Spec, FocP]?
 b. If we deny that the *wh*-phrase travels through [Spec, FocP], how do we capture (58b)?

Our somewhat tentative answer runs as follows. The key hypothesis is that English interrogative C has a strong head-attracting feature that, in root contexts (see (53)), attracts the Foc head overtly, *before* Foc does anything itself. C's attracting Foc takes Foc's strong head-attracting feature up to C. Foc's own (strong) head feature can be checked there against C's head feature, as a result of which Foc's head feature is effectively satisfied. Consequently, once Foc has raised to C, it no longer attracts an auxiliary up to it. This accounts for the nonoccurrence of subject-auxiliary inversion (see (56b)). C's attracting Foc also takes Foc's strong [+foc] feature (demanding an overt [+foc]-bearing specifier) up to C. Upon Foc-to-C movement, then, the complex C + Foc head demands an overt specifier (specifically, a [+wh, +foc] phrase), which raises to [Spec, CP] *directly*, without a stopover in [Spec, FocP]. In fact, because Foc raises to C, [Spec, FocP] is not projected at all; as a consequence, negative inversion is impossible in embedded *wh*-questions, and (58b) is accounted for.²²

²¹ Culicover (1993) has pointed out that *wh*-extraction from a clause featuring negative inversion is grammatical (and actually lifts the *that*-trace effect).

- (i) a. Leslie is the person who I said that under no circumstances would run for president.
 b. Who did John say that under no circumstances would run for president?

Since (ia) (Culicover's own example) is a case of relativization, the *wh*-phrase here is not a focus, so this is not a particularly interesting case. More interesting is (ib) (our variation on Culicover's theme): equally grammatical, and much better than (58b). The key to understanding this contrast is the fact that there is no successive-cyclic focus movement—a constituent X is always the focus of at most one single clause, never of several clauses at the same time (Hungarian is a perfect example of this; see Lipták 2001 for discussion). So the FocP where *who* checks its [+foc] feature is in the matrix clause, and there is no competition for the [Spec, FocP] position in the embedded clause in (ib) (unlike in (58)).

²² Note the similarity between our discussion here and Chomsky's (1995:chap. 3) and Bobaljik and Jonas's (1996) account of nominative checking by the subject in English: T raises overtly to Agr_S, and as a result, all of T's features are checked in the checking domain of Agr_S; no [Spec, TP] is ever projected, and constructions that depend on the presence of [Spec, TP] (transitive expletive constructions, in particular) cannot arise. In our account the nonprojection of [Spec, FocP] in embedded clauses takes care of the incompatibility of *wh*-fronting and negative inversion in these contexts. Of course, the fact that negative inversion and *wh*-fronting cannot be combined in root questions either is straightforward as well: the two target the same position, [Spec, FocP], which is nonrecursive.

The hypothesis that C can attract Foc *before* Foc becomes active entails a clearly countercyclic derivation, in precisely the same way that Chomsky's and Bobaljik and Jonas's account of nominative checking in English does. We will not speculate here on the proper view of the cycle, leaving this for future research. We stress, though, that the account of *wh-the-hell* proposed here is independent of the vicissitudes of our suggestions concerning (58).

If this answer stands up to scrutiny, we have a comprehensive account of the key facts of English *wh*-movement—one compatible with what is known about other languages, as well as with our account of the distribution of *wh-the-hell*, to which we now return.

4 Old Puzzles Revisited: *Wh-the-Hell* in Multiple Questions

In this section we consider certain recalcitrant puzzles associated in the literature with *wh-the-hell*: (a) that *wh-the-hell* phrases crosslinguistically cannot be used as topics, (b) that *wh-the-hell* does not allow for nonecho interpretations in multiple *wh*-structures, (c) that it can never stay in situ, and (d) that it does not interact with other quantifiers the way regular *wh*-phrases do. We show that these puzzles cease to be mysterious once *wh-the-hell* is granted PI status.²³

4.1 Multiple *Wh-Fronting* and the *FocP/TopP Distinction*

The idea that *wh*-phrases may raise to [Spec, FocP] may be novel for English, but it is well established for languages like Hungarian, where the sole *wh*-constituent of a single *wh*-question systematically lands in the Foc position to the right of the complementizer in embedded finite clauses (see Brody 1995 and references therein; recall (45b) above). In a Hungarian multiple *wh*-question like ‘Who bought what?’ all *wh*-expressions front and surface to the right of the complementizer.

- (60) a. (Kíváncsi vagyok hogy) *ki mit vett*.
 curious I-am that who what-ACC bought
 b. (Kíváncsi vagyok hogy) *mit ki vett*.
 curious I-am that what-ACC who bought
 both: ‘(I wonder) who bought what.’

Two hypotheses spring to mind when analyzing multiple *wh*-fronting in Hungarian: either (a) all *wh*-expressions are in the Foc domain (adjoined to one another, or in a multiple specifier configuration; the choice is immaterial here), or (b) only one *wh*-expression is in [Spec, FocP], the remaining phrases targeting TopP (or Beghelli and Stowell’s (1997) DistP). That the latter approach is likely to be correct is shown by the following observation.²⁴ While the Hungarian examples in (61ai) and (61bi) are good, their counterparts in (61aai) and (61bii) are ill formed; the contrast is robust.

²³ One restriction on *wh-the-hell* that we do not address here is Pesetsky’s (1987) observation that it cannot be pied-piped by its container. For some discussion, see section 5 of Den Dikken and Giannakidou 2001, where this restriction is attributed to a general incapacity of *wh-the-hell* when it comes to LF feature movement, as part of a broader outlook on pied-piping in terms of feature propagation to the pied-piper: the [+wh] feature of *wh-the-hell* cannot propagate to its container; hence, the maximal ‘‘pied-pipable’’ phrase containing *wh-the-hell* is the *wh*-phrase itself.

²⁴ To our knowledge, this is a novel observation; we thank Anikó Lipták (personal communication) for providing the data and judgments.

- (61) a. i. *Ki mi a fenét* vett?
 who what the hell-ACC bought
 ii. **Ki a fene mit* vett?
 who the hell what-ACC bought
 b. i. *Mit ki a fene* vett?
 what-ACC who the hell bought
 ii. **Mi a fenét ki* vett?
 what the hell-ACC who bought

On the fairly uncontroversial assumption that in Hungarian multiple *wh*-questions the *wh*-phrase that is directly adjacent to the finite verb fronts to [Spec, FocP]—with the *wh*-expressions preceding it occupying [Spec, TopP] positions (of recursive TopPs)—the Hungarian data in (61) reveal that *wh-the-hell* is welcome in [Spec, FocP] but not in [Spec, TopP]. This, of course, makes perfect sense, from the perspective on *wh-the-hell* phrases that we pursue. With *wh-the-hell* analyzed as a dependent existential PI, the ungrammaticality of (61a_{ii}) and (61b_{ii}) simply reduces to the fact that PIs of this kind are generally unacceptable as topics.²⁵

- (62) a. I don't think that I will invite any linguists to the party.
 b. *I don't think that any linguists, I will invite to the party.

The prerequisite for topichood is some form of givenness (or pragmatic referentiality as in Reinhart 1982). From the fact that dependent quantifiers do not assert or imply existence it follows directly that such quantifiers can never be topicalized (for more details, see Giannakidou 1998:236–239). Crosslinguistic data robustly confirm this observation. Thus, the Hungarian data in (61) at once vindicate the PI approach to *wh-the-hell* that we pursue here and support the view that Hungarian multiple *wh*-questions employ the TopP-FocP structure introduced in section 3.

4.2 The Single-Pair Echo Reading of English Multiple Wh-Questions Featuring Wh-the-Hell

It may now look surprising that, in contrast to Hungarian (61a–b), the English multiple *wh*-construction in (64a) is interpretable only as a single-pair echo question (Lee (1994), in fact, stars examples like (64a) outright). That the single-pair/echo-only reading of (64a) is not, per se, a hallmark of English multiple questions featuring a *wh-the-hell* phrase is shown by the fact that

²⁵ Richard Kayne (personal communication) suggests that (62b) becomes better if negative inversion applies in the embedded clause.

(i) ?I don't think that any linguists would I invite to the party.

However, this judgment seems rather hard to replicate; note that for most speakers negative inversion with past tense remains unacceptable (but see Postal 2000).

(ii) *I don't think that any linguists did I invite to the party.

To the extent that cases like (i) are acceptable, the fact that a nonnegative constituent like *any linguists*, being licensed by a negation in the matrix clause, may trigger negative inversion raises interesting questions orthogonal to our concerns in this article. A potential improvement of (62b) as in (i) is consistent with our perspective: if the position that triggers negative inversion is [Spec, FocP] (recall section 3.2.2), then PIs, while barred from the Top position, may be welcome in the Foc position. The difference between (i) and (ii) would remain to be addressed, however.

the embedded question in (64b) does allow a pair-list interpretation.²⁶ Thus, while absent in (63) (for reasons that are now familiar: *wh-the-hell* has a c-commanding licenser in both examples), a root/embedded asymmetry does emerge in the same structural contexts in the domain of multiple interrogation.

- (63) a. Who the hell is in love with him?
 b. I {am wondering/would like to know} who the hell is in love with him.
- (64) a. ?Who the hell is in love with who? [single-pair echo reading only]
 b. I {am wondering/would like to know} who the hell is in love with who.

The contrast in (64) can be made to follow from the discussion in section 3. The key premise here is that the in-situ *wh*-phrase in a double *wh*-structure is licensed in the Foc projection. On the standard assumption that sentences have a unique Foc phrase (see É. Kiss 1987; recall the examples in (46)), this means that *who the hell* in (64) cannot be licensed by Foc. Two options then remain: the subject-*wh* could be either in [Spec, TopP] or in [Spec, CP]. Of these two options, the former is ruled out because *wh-the-hell* PIs cannot be topics, just like PIs in general. So only one operator position remains as the landing site of *who the hell* in (64): [Spec, CP]. The contrast between (64a) and (64b) is now as expected: while in the latter *who the hell* is c-commanded by its licenser, the interrogative or directive matrix verb, in the former it is outside the c-command domain of the Q operator in C (see (65a)) and thus fails to be licensed.²⁷ A pair-list real question interpretation for (64a) is therefore unavailable.²⁸

- (65) a. *[_{CP}[who the hell]_i C_Q [_{FocP}[with who]_j [_{IP} t_i is in love t_j]]]
 b. I am wondering [_{CP}[who the hell]_i C_Q [_{FocP}[with who]_j [_{IP} t_i is in love t_j]]]

On the other hand, a single-pair echo reading does seem to be available for (64a). To see how we can account for this interpretation, let us first make the representation of simple echo questions like (66) explicit. The syntax of such questions is that of ordinary declarative clauses: there is no subject-auxiliary inversion, and there is no Q operator in C. The latter is evidenced by the fact that PIs cannot be licensed in echo questions, as shown by (67), from Lee 1994.

²⁶ Thanks to Richard Kayne and Jason Merchant for clarifying this.

²⁷ The structures in (65a–b) are approximate LF representations; we have represented the association of the in-situ *wh*-phrase to Foc in terms of category movement at LF, but nothing turns on this (see Kayne 1998 for an overt syntactic analysis of English focus movement, Chomsky 1995:chap. 4 for a feature movement approach to all LF movement, and Pesetsky 2000 for a more refined perspective).

²⁸ Our logic leads us to expect ungrammaticality also for single *wh-the-hell* questions with focus on some constituent other than the *wh*-phrase—concretely, we expect (63a) to become unacceptable as a real question if *him* is assigned focal stress (?*Who the hell is in love with HIM?). This seems correct. Notice, however, that the examples in (i) (cf. Lee 1994: sec. 2, 4–5) are grammatical. Here, the focused element is the dummy auxiliary *do*, which is a head raised to Foc; it hence does not compete with *wh-the-hell*, and grammaticality is expected, as desired.

(i) a. Who the hell DID my dog bite?
 b. What the hell DOES he eat?

(66) John said something to who?

(67) *John said anything to who?

Recall that we held the Q operator in C responsible for licensing PIs in questions. Given that the licensing of *anything* fails in (67), we are led to conclude that no Q operator is present in this example. The echo *wh*-constituent, however, is still interpreted as an interrogative constituent, albeit one taking narrow scope. We can capture this by arguing that the echo *wh*-word itself hosts a Q morpheme (see Hagstrom 1998 on Q morphemes, and see Lipták 2001 for additional discussion of the complex structure of *wh*-words).²⁹ The structure of (66) can now be represented as in (68); the *wh*-in-situ will eventually make its way up to [Spec, FocP], in agreement with its being the focus of the sentence:

(68) [_{IP} John said something to [who + Q]]

The proposal that echo *wh*-expressions are distinct from regular *wh*-phrases in containing a Q morpheme may help us make sense of the fact that echo *wh*-expressions are not attracted to C (while regular *wh*-expressions are). On the assumption that the morphological complexity of echo *wh*-phrases translates into a syntactically complex structure, with the [+wh] feature being buried inside it, the [+wh] feature of echo words will be unattractable from C, as desired.

The example in (64a) (on its single-pair echo reading, the one we are interested in here) is a somewhat more complicated case. Here we have, in addition to an emphatic in-situ *wh*-phrase, a ‘‘real’’ *wh*-constituent, *who the hell*. The presence of *who the hell* implies the presence of a C with a Q operator, and it is this Q operator that licenses *anything* in (69), which should be contrasted with (67).

(69) Who the hell said anything to who?

Q will also be able to license *who the hell* provided that, on the single-pair echo reading of (64a) and (69), *who the hell* is not forced all the way up to [Spec, CP], as it was in (65a). On the pair-list interpretation of (64a), *who the hell* was forced up so high because the in-situ *wh*-phrase took the [Spec, FocP] position all by itself. Let us suppose, however, that when the in-situ *wh*-phrase is marked with a Q morpheme (as in echo questions), it can team up with another *wh*-phrase in [Spec, FocP], adjoining to it and forming a single *wh*-pair with it, as depicted in (69).

(70) [_{CP} C_Q [_{FocP}[[who the hell]_i [with who + Q]_j] [_{IP} t_i is in love t_j]]]

Hence, in this derivation of (64a) on its single-pair echo reading, *who the hell* is in [Spec, FocP], properly licensed under c-command by the Q operator in C, and it has the echoic *wh*-in-situ—with its Q morpheme—adjoined to it, the two together constituting a single pair of *wh*-phrases.

²⁹ For the view that *wh*-phrases in echo questions are not to be treated as quantifiers, see Obenauer 1994:293, fn. 18. Note that our approach differs from Hagstrom’s in that, in our analysis, adjunction of a Q-marked *wh*-constituent to a ‘‘real’’ *wh*-phrase gives rise to a single-pair interpretation (whereas in Hagstrom’s analysis single-pair readings result from a structure in which the Q morpheme c-commands the two *wh*-phrases from a relatively high position in the tree).

4.3 The Ban on *Wh-the-Hell in-Situ* in Multiple *Wh*-Questions as an Intervention Effect

In (64) we found a root/embedded contrast with respect to the availability of a pair-list real question interpretation. Such a root/embedded contrast disappears completely in multiple *wh*-constructions where *wh-the-hell* is in situ. Both members of the pair in (71) are ungrammatical.

- (71) a. *Who is in love with who the hell?
 b. *I {am wondering/would like to know} who is in love with who the hell.

It seems to be generally impossible for *wh-the-hell* to remain in situ (at least, in languages that have overt syntactic *wh*-fronting; see Pesetsky 1987 and Obenauer 1994:chap. 3 for discussion of Japanese).

From our perspective, the ungrammaticality of (71) can be analyzed as an *intervention effect* (see, e.g., Linebarger 1980, 1987, Honcoop 1998, Beck 1996, Pesetsky 2000), on a par with the deviance of examples like (72b), involving the PI *a red cent* (originally noted by Linebarger).

- (72) a. John didn't give Mary *a red cent*.
 b. *John didn't give **every charity** *a red cent*.

On the assumption that a PI must be in the *immediate* scope of its licenser (Linebarger's (1987) Immediate Scope Constraint), (72b) fails because *every charity*, a scope-bearing element, intervenes between *-n't* and *a red cent* (cf. (72a)). In the same vein, the examples in (71) can now be ruled out as instances of the intervention effect (whose precise analysis is immaterial here; see the references cited above for discussion). We illustrate this for (71a) in (73b): the question operator *Q* in *C* is the intended licenser of *who the hell*, but *who* in [Spec, FocP] intervenes between *Q* and *who the hell*, blocking licensing.

- (73) a. *[Neg ... [**every charity** ... [a red cent ...]]]
 b. *[Q ... [**who** ... [who the hell ...]]]

This account carries over to (71b) on the assumption that the harmful intervener is the *trace* of the overtly moved *wh*-phrase (not the actual *wh*-phrase itself: the latter is in [Spec, CP] in this embedded *wh*-clause, hence outside the *c*-command domain of the *Q* operator in the embedded *C*). Put differently, no member of the chain of a scope-bearing element may intervene between a PI and its licenser.³⁰

³⁰ The ban on *wh-the-hell* phrases in situ may be more general; Obenauer (1994), for instance, discusses data from French—a language allowing *wh*-in-situ as an alternative to *wh*-fronting in simple root *wh*-questions like *Qui a-t-il vu?* 'who has-he seen' and *Il a vu qui?*—showing that the *wh*-in-situ strategy fails with *qui diable* 'who devil, i.e., who the hell' (cf. **Il a vu qui diable?*). Obenauer also points out that the ban on *wh*-in-situ is not limited to *wh-the-hell*, but extends also to rhetorical questions and *wh*-exclamatives. We will not consider these additional matters here, but see Den Dikken and Giannakidou 2001:sec. 5 for some discussion of what may cause the general ban on *wh-the-hell* in situ. At any rate, the ungrammaticality of (71a–b) certainly follows as an intervention effect on the PI analysis of *wh-the-hell* that we have expounded here.

4.4 The Ban on Quantifier Scope Interaction: Another Intervention Effect

Finally, additional support for the significance of intervention effects in the domain of *wh-the-hell* phrases comes from the observation (also made in section 1.4) that unlike regular *wh*-phrases, *wh-the-hell* has fixed scope with respect to quantifiers. We repeat the relevant examples here, along with partial structural representations of the example in (75), after application of QR to the universal quantifier.

- (74) What did everyone buy for Max? [ambiguous]
 (75) What the hell did everyone buy for Max? [unambiguous]
 a. [Q ... [what the hell ... **everyone** ...]]
 b. *[Q ... **everyone** ... [what the hell ...]]

While (74) is scopally ambiguous, (75) has only the reading in which the *wh*-word takes wide scope vis-à-vis the universal quantifier (there is one thing that was bought for Max by all persons involved). In light of the foregoing discussion, the lack of a wide scope reading for *everyone* in (75) can now be reduced to an intervention effect: it would involve raising the universal quantifier to a position above the landing site of *what the hell* (as in (75b)), whereby the universal quantifier would come to intervene between the Q operator in C and its licensee, *what the hell* in [Spec, FocP].³¹

5 Conclusion

In this article we have proposed an analysis of *wh-the-hell* phrases as polarity items in the refined polarity framework developed by Giannakidou (1998, 1999). We have shown that the polarity item status and the particular interpretations of questions with *wh-the-hell* follow from the lexical semantic content of these phrases. We have also shown that, in order to be licensed, *wh-the-hell* must systematically be c-commanded by a local licenser and that, when this requirement is not met, the result is either ungrammatical or not a “real” question. The polarity account we have proposed here has significant implications for the analysis of *wh*-movement, particularly in English. It implies that English overt *wh*-movement targets [Spec, FocP] in root single questions but [Spec, CP] in embedded contexts, confirming and further extending claims made by Pesetsky

³¹ Notice that we cannot assume, as did May (1985), that the QR site of *everyone* is the same regardless of whether it takes wide scope or not; we must assume that QR targets a different position on the wide scope reading than it does on the narrow scope reading. In the context of intervention effects, we may also draw attention to another observation made by Lee (1994).

- (i) a. Who the hell saw anyone?
 b. *Who the hell did anyone see?

On our assumptions, the ungrammaticality of (ib) is straightforwardly attributable to an intervention effect, with *who the hell* as a harmful intervener between *anyone* and its licenser, the Q operator in C (see (ii); for brief discussion of why (ia) does not give rise to an intervention effect, see Den Dikken and Giannakidou 2001).

- (ii) *[Q ... [who the hell ... **anyone** ...]]

(1989), and embedding these claims in a general theory of *wh*-movement built on minimalist foundations.

Our overall conclusion is that *wh-the-hell* expressions are polarity items, dependent on a *c*-commanding licenser from the pool of elements that are known to license polarity items in general; and this, coupled with independently supported assumptions about the structure of *wh*-questions and the target of *wh*-movement, accurately captures the otherwise quite mysterious distribution of aggressively non-D-linked *wh*-phrases.

References

- Adger, David, and Josep Quer. 2001. The syntax and semantics of unselected embedded questions. *Language* 77:107–134.
- Baker, C. L. 1970. Notes on the description of English questions: The role of an abstract question morpheme. *Foundations of Language* 7:197–238.
- Baltin, Mark. 1985. *Toward a theory of movement rules*. New York: Garland.
- Bayer, Josef. 1996. *Directionality and Logical Form: On the scope of focusing particles and wh-in situ*. Dordrecht: Kluwer.
- Beck, Sigrid. 1996. Quantified structures as barriers for LF movement. *Natural Language Semantics* 4: 1–56.
- Beghelli, Filippo, and Tim Stowell. 1997. Distributivity and negation: The syntax of *each* and *every*. In *Ways of scope taking*, ed. by Anna Szabolcsi, 71–77. Dordrecht: Kluwer.
- Bennis, Hans. 1995. The meaning of structure: The *wat voor* construction revisited. In *Linguistics in the Netherlands 1995*, ed. by Marcel den Dikken and Kees Hengeveld, 25–36. Amsterdam: John Benjamins.
- Berman, Steve. 1991. On the semantics and logical form of *wh*-clauses. Doctoral dissertation, University of Massachusetts, Amherst.
- Bobaljik, Jonathan, and Dianne Jonas. 1996. Subject positions and the roles of TP. *Linguistic Inquiry* 27: 195–236.
- Bošković, Željko. 1998. On the interpretation of multiple questions. Available at <http://mitpress2.mit.edu/celebration> or <http://addendum.mit.edu/celebration>.
- Branigan, Philip. 1992. Subjects and complementizers. Doctoral dissertation, MIT, Cambridge, Mass.
- Bresnan, Joan. 1972. Theory of complementation in English syntax. Doctoral dissertation, MIT, Cambridge, Mass.
- Brody, Michael. 1995. Focus and checking theory. In *Approaches to Hungarian V*, ed. by István Kenesei, 31–43. Szeged: JATE Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Culicover, Peter. 1993. Evidence against ECP accounts of the *that-t* effect. *Linguistic Inquiry* 24:557–561.
- Dayal, Veneeta. 1997. Free choice and *-ever*, identity and free choice readings. In *Proceedings of SALT 7*, ed. by Aaron Lawson, 99–116. Ithaca, N.Y.: Cornell University, CLC Publications.
- Dikken, Marcel den. 2001. On the syntax of *wh*-movement. In *Linguistics in the Big Apple*. CUNY/NYU Working Papers in Linguistics 1.
- Dikken, Marcel den, and Anastasia Giannakidou. 2001. What the hell? In *NELS 31*, ed. by Minjoo Kim and Uri Strauss, 163–182. Amherst: University of Massachusetts, GLSA.
- Emonds, Joseph. 1976. *A transformational approach to English syntax*. New York: Academic Press.
- Fintel, Kai von. 2000. Whatever. In *Proceedings of SALT 10*, ed. by Brendan Jackson and Tanya Matthews, 27–39. Ithaca, N.Y.: Cornell University, CLC Publications.

- Giannakidou, Anastasia. 1998. *Polarity sensitivity as (non)veridical dependency*. Amsterdam: John Benjamins.
- Giannakidou, Anastasia. 1999. Affective dependencies. *Linguistics and Philosophy* 22:367–421.
- Giannakidou, Anastasia. 2001. The meaning of free choice. *Linguistics and Philosophy* 24:659–735.
- Groenendijk, Jeroen, and Martin Stokhof. 1984. Studies in the semantics of questions and the pragmatics of answers. Doctoral dissertation, University of Amsterdam.
- Groenendijk, Jeroen, and Martin Stokhof. 1997. Questions. In *Handbook of logic and language*, ed. by Johan van Benthem and Alice ter Meulen, 1055–1124. Amsterdam: Elsevier.
- Haegeman, Liliane, and Raffaella Zanuttini. 1991. Negative heads and the Neg-Criterion. *The Linguistic Review* 8:233–251.
- Hagstrom, Paul. 1998. Decomposing questions. Doctoral dissertation, MIT, Cambridge, Mass.
- Han, Chung-hye, and Laura Siegel. 1996. Syntactic and semantic conditions on NPI-licensing in questions. In *Proceedings of the 15th West Coast Conference on Formal Linguistics*, ed. by Brian Agbayani and Sze-Wing Tang, 177–192. Stanford, Calif.: CSLI Publications.
- Heim, Irene. 1982. The semantics of definite and indefinite NPs. Doctoral dissertation, University of Massachusetts, Amherst.
- Heim, Irene. 1994. Interrogative semantics and Karttunen's semantics for 'know'. In *IATLI*, ed. by R. Buchalla and Anita Mittwoch, 128–144. Jerusalem: Akademon.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.
- Honcoop, Martin. 1998. Dynamic excursions on weak islands. Doctoral dissertation, University of Leiden.
- Horn, Laurence. 1972. On the semantic properties of logical operators in English. Doctoral dissertation, UCLA, Los Angeles, Calif.
- Horn, Laurence. 2000. Any and -ever: Free choice and free relatives. In *Proceedings of the 15th Annual Conference of the Israeli Association for Theoretical Linguistics*, ed. by Adam Zachary Wyner, 71–111. Haifa: University of Haifa.
- Kadmon, Nirit, and Fred Landman. 1993. Any. *Linguistics and Philosophy* 16:353–422.
- Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1:3–44.
- Katz, Jerrold, and Paul Postal. 1964. *An integrated theory of linguistic descriptions*. Cambridge, Mass.: MIT Press.
- Kayne, Richard. 1998. Overt versus covert movement. *Syntax* 1:128–191.
- É. Kiss, Katalin. 1987. *Configurationality in Hungarian*. Budapest: Akadémiai Kiadó; Dordrecht: Reidel.
- Kratzer, Angelika. 1981. On the notional category of modality. In *Words, worlds, and contexts*, ed. by Hans Eikmeyer and Hendrik Rieser, 38–74. Berlin: de Gruyter.
- Ladusaw, William A. 1979. Polarity sensitivity as inherent scope relations. Doctoral dissertation, University of Texas, Austin.
- Ladusaw, William. 1986. Principles of semantic filtering. In *Proceedings of the 5th West Coast Conference on Formal Linguistics*, ed. by Mary Dalrymple, Jeffrey Goldberg, Kristin Hanson, Michael Inman, Chris Piñon, and Stephen Wechsler, 129–144. Stanford, Calif.: CSLI Publications.
- Lahiri, Utpal. 1991. Embedded interrogatives and predicates that embed them. Doctoral dissertation, MIT, Cambridge, Mass.
- Laka, Itziar. 1990. Negation in syntax: The nature of functional categories and projections. Doctoral dissertation, MIT, Cambridge, Mass.
- Lee, Felicia. 1994. Negative polarity licensing in *wh*-questions: The case for two licensors. Master's thesis, UCLA, Los Angeles, Calif.
- Linebarger, Marcia. 1980. The grammar of negative polarity. Doctoral dissertation, MIT, Cambridge, Mass.
- Linebarger, Marcia. 1987. Negative polarity and grammatical representation. *Linguistics and Philosophy* 10:325–387.
- Lipták, Anikó. 2001. On the syntax of *wh*-items in Hungarian. Doctoral dissertation, University of Leiden.

- May, Robert. 1985. *Logical Form*. Cambridge, Mass.: MIT Press.
- McCloskey, James. 1992. Adjunction, selection, and embedded verb second. LRC Report 92-07. Santa Cruz: University of California, Linguistics Research Center.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. To appear. Swiping in Germanic. In *Studies in Germanic syntax*, ed. by Jan-Wouter Zwart and Werner Abraham. Amsterdam: John Benjamins.
- Munsat, Stanley. 1986. Wh-complementizers. *Linguistics and Philosophy* 9:191–217.
- Obenauer, Hans-Georg. 1994. Aspects de la syntaxe A-barre: Effets d'intervention et mouvements des quantifieurs. Thèse de doctorat d'état, Université de Paris VIII.
- Pesetsky, David. 1987. Wh-in-situ: Movement and unselective binding. In *The representation of (in)definiteness*, ed. by Eric Reuland and Alice G. B. ter Meulen, 98–130. Cambridge, Mass.: MIT Press.
- Pesetsky, David. 1989. Language-particular processes and the Earliness Principle. Paper presented at the 12th GLOW Colloquium, Utrecht, 5 April 1989. [Abstract in *GLOW Newsletter*.]
- Pesetsky, David. 2000. *Phrasal movement and its kin*. Cambridge, Mass.: MIT Press.
- Postal, Paul M. 2000. A remark on English double negatives. Ms., New York University.
- Postma, Gertjan. 1994. The indefinite reading of WH. In *Linguistics in the Netherlands 1994*, ed. by Reineke Bok-Bennema and Crit Cremers, 187–198. Amsterdam: John Benjamins.
- Progovac, Ljiljana. 1994. *Positive and negative polarity: A binding approach*. Cambridge: Cambridge University Press.
- Quer, Josep. 1998. Mood at the interface. Doctoral dissertation, University of Utrecht.
- Quer, Josep. 1999. The quantificational force of free choice items. Ms., University of Amsterdam.
- Reinhart, Tanya. 1982. Pragmatics and linguistics: An analysis of sentence topics. *Philosophica* 27:53–94.
- Rooth, Mats. 1985. Association with focus. Doctoral dissertation, University of Massachusetts, Amherst.
- Rullmann, Hotze. 1996. Two types of negative polarity items. In *NELS 26*, ed. by Kiyumi Kusumoto, 335–351. Amherst: University of Massachusetts, GLSA.
- Sadock, Jerrold M. 1971. Queclaratives. In *Papers from the 7th Regional Meeting of the Chicago Linguistic Society*, 223–232. Chicago: University of Chicago, Chicago Linguistic Society.
- Tredinnick, Victoria. 1996. On the interpretation and distribution of *-ever* in English free relatives. In *Proceedings of CONSOLE 4*. Leiden: University of Leiden, Student Organization of Linguistics in Europe.
- Wachowicz, Krystyna. 1974. On the syntax and semantics of multiple questions. Doctoral dissertation, University of Texas, Austin.
- Winkler, Suzanne. 1997. *Focus and secondary predication*. Berlin: Mouton de Gruyter.
- Wouden, Ton van der. 1994. Negative contexts. Doctoral dissertation, University of Groningen.
- Zwarts, Frans. 1986. Categoriale grammatica en algebraische semantiek: Een studie naar negatie en polariteit in het Nederlands. Doctoral dissertation, University of Groningen.
- Zwarts, Frans. 1996. Three types of polarity. In *Plural quantification*, ed. by Fritz Hamn and Erhard Hinrichs, 177–238. Dordrecht: Kluwer.
- Zwarts, Frans. 1995. Nonveridical contexts. *Linguistic Analysis* 25:286–312.

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