What the hell?!

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0   Introduction[1]

Aggressively non-D–linked *wh*-phrases (like *what on earth, who the hell*) exhibit a number of syntactic peculiarities. Many of these are well documented in the literature. Our primary focus in this paper, however, will be on a property of aggressively non-D–linked *wh*-phrases which to our knowledge has so far escaped attention — the fact that their distribution (in single *wh*-questions) matches that of polarity items (PIs). After presenting the novel facts which make the case that *wh-the-hell* is a PI, we will exploit the idea that *wh-the-hell* phrases are PIs in order to explain the more familiar puzzles of *wh-the-hell*.

1   Differences between *wh-the-hell* and regular *wh*-phrases: Support for PI status

At first blush, there would appear to be little cause for the suspicion that *wh-the-hell* is a polarity item of sorts. After all, in simple root *wh*-questions like (1), aggressively non-D–linked *wh*-phrases behave just like ordinary *wh*-phrases:

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

Both interrogatives are genuine information questions. When the speaker utters (1) (s)he expects that somebody would indeed buy that book, and seeks information as to the identity of the buyer(s).[2]

But *who* and *who the hell* go their own separate ways when it comes to the possibility of negative rhetorical inferences in *wh*-questions featuring modal verbs. To see this, take a look at the examples in (2), 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?

The example in (2a), with the regular *wh*-phrase *who*, can still be interpreted as an information question — though it can also have a (less salient) reading as a negative rhetorical question. The interrogative with *who the hell* in (2b), on the other hand, cannot at all be used as a genuine information question in this context, and an answer like 'John' seems inappropriate. Rather, when a speaker utters (2b), (s)he seems to presume that nobody would buy that book: if an answer like 'John' is given, the questioner will be taken by surprise.

In licensing negative rhetorical readings, *wh-the-hell* phrases are similar to certain negative polarity items (NPIs) known in the literature as minimizers, e.g. *give a damn*, *sleep a wink, lift a finger*. The interrogative in (3) can only be read as requiring a negative answer. The fact that *wh-the-hell* phrases, in questions like (2b), have this reading, too, offers a clear indication that there is a parallel with minimizer NPIs.

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

Other PIs, like *any*, which are not as strong as minimizers, also allow negative rhetorical readings with modal verbs and disallow them in the absence of the modal:

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2   It has been observed (Lee 1994) that, in addition to informative answers, (1b) licenses a negative inference of the form 'Nobody was supposed to read that paper'; Lee (1994) labels this inference the 'surprise' reading. Though most of the speakers we checked the data with confirm the presence of surprise readings, these readings seem harder to get for some speakers (as Richard Kayne, p.c., has pointed out to us). Surprise seems to be a pragmatic inference, therefore some variation may be expected. Surprise readings are clearly not identical to the negative rhetorical readings we discuss below, since a positive proposition provides the answer in the former case but a negative one in the latter.

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

While (4a) (with episodic past tense) is an information question, in the example in (4b) (with the modal *would*), the information reading of the question is considerably suppressed (if not completely lost), and a negative rhetorical reading arises even with *any*. This is exactly parallel to the pattern we observed in (1)/(2) with aggressively non-D–linked *wh*-questions.

A second indication that *who the hell* is a polarity item presents itself when we consider *who* and *who the hell* in the complements of positive veridical predicates like *know*. While (5a) is perfect, (5b) is ungrammatical. Interestingly, however, (5b) can be 'saved' by negating the matrix clause, as in (6b). That this is not an isolated quirk of *wh*-questions embedded under *(don't) know* is shown by the fact (which, for reasons of space, will go unillustrated here) that the pattern is replicated with verbs like *tell* and *confirm*.

(5) a I know who bought that book.
     b *I know who the hell bought that book.
(6) a I don't know who bought that book.
     b I don't know who the hell bought that book.

The role played by negation in (6b) once again cues a comparison between the distribution of aggressively non-D–linked *wh*-phrases and PIs. PIs are often dependent on a c-commanding negation for grammaticality. Thus, while (7a) is ungrammatical, negative (7b) is perfect. The examples in (7) match the corresponding cases with aggressively non-D–linked *wh*-phrases perfectly.

(7) a *John knows that Martha bought any book.
     b John doesn't know that Martha bought any book.

The parallel between *wh-the-hell* and PIs goes further than this. We illustrate in (8)-(12) that, just like *anyone*, aggressively non-D–linked *wh*-phrases are licensed in other typical PI–environments, like the complement of interrogative and directive verbs such as *wonder* and *would like*, complements of negative verbs like *refuse*, the scope of *only* and negative quantifiers like *nobody*, and the protasis of conditionals:

(8) a I {am wondering/would like to know} if anyone bought that book.
     b I {am wondering/would like to know} who the hell bought that book.
(9) a John refused to tell me if anyone bought that book.
     b John refused to tell me who the hell bought that book.

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(10) a   Only John knows who the hell wrote this secret report.
      b   Only John knows whether anyone is aware of this secret report.
(11) a   Nobody knows who the hell wrote this secret report.
      b   Nobody knows whether anyone is aware of this secret report.
(12) 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 aggressively non-D–linked *wh*-phrases is testable, we find that it is systematically confirmed.

There are other differences between regular *wh*-phrases and aggressively non-D–linked ones which, though not immediately recognizable as earmarks of polarity, can also be blamed on the PI–status of *wh-the-hell*. These concern the interpretive contrast between (13a) and (13b), and the fact that, unlike regular *wh*-phrases, aggressively non-D–linked ones seem to have fixed scope with respect to quantifiers, as seen in (14)/(15) (first observed, to our knowledge, by Lee 1994), with (14) being ambiguous between (16a) and (16b), and (15) only having the narrow-scope reading in (16b).

(13) a   Who is in love with who?   [pair-list/single-pair]
      b   ^{??}Who the hell is in love with who?   [single-pair only]
(14)   What did everyone buy for Max?   [ambiguous]
(15)   What the hell did everyone buy for Max?   [unambiguous]
(16) 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?

In section 4, we will reduce these special properties of *wh-the-hell* to its status as a polarity item as well.[3]

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3   A related fact, observed by Lee (1994) alongside the facts in (14)/(15), is that in argument *wh-the-hell* questions no *any*–NPIs can be licensed in subject position (**Who the hell did anyone see?*). We will address this in section 4 as well. Lee (1994) develops an interesting analysis of the fact that *wh-the-hell* questions tend to give rise to negative answers which, in some sense, treats aggressively non-D–linked *wh*-expressions as polarity items as well (although Lee never makes this explicit and does not stress it; instead, the emphasis of her discussion is on the interference of *wh-the-hell* with the licensing of *any*-type negative polarity items). In her account, *wh-the-hell* questions are characterized by the presence in the syntactic structure of either a (phonologically unrealized) NegP or a polarity licensing operator in the C–domain; if we assume that the latter is actually situated in C (rather than in SpecCP, as Lee assumes), *wh-the-hell* systematically entertains a Spec–Head relationship with a polarity licenser at some point in the overt-syntactic derivation, which is how *wh-the-hell* is licensed. Viewed this way, *wh-the-hell* is very much like negative expressions in negative concord languages, which likewise have been argued to be licensed under Spec–Head agreement. We take a different approach: for us, *wh-the-hell* phrases are polarity items which must be licensed under c-command. Our reasons for this insistence on licensing under c-command will become clear in the discussion to follow, based on examples not discussed in previous work, to our knowledge.

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2   Polarity items and the semantics of being aggressively non-D–linked

2.1   *The landscape of polarity items*

First, though, let us make an important caveat. Polarity phenomena in natural language are not homogeneous but quite diverse (see Giannakidou 1998 for detailed discussion). Within and across languages, PIs come in different varieties with overlapping but hardly identical distributions — we find weak, strong and superstrong PIs, affective PIs, free choice items (FCIs), intensional PIs, and positive PIs (PPIs). While PIs of the same type are certainly expected to exhibit identical distributions across languages, there is no *a priori* expectation that the distribution of one type of PIs should be identical to that of any of the other types. In this paper, we seek to identify *wh-the-hell* as a PI; but it is a PI of a novel subtype, hence not necessarily *identical* in behavior and distribution to any other PI–type.

What we *do* expect to be the case, though, is that any PI, no matter what its subtype, will come under the umbrella of the general definition of the entire species of polarity items. In particular, there is one distributional constraint that all PI–paradigms (with the exception of positive PIs, which are PIs favoring veridical contexts) must obey in order to qualify for PI status: they must be inadmissible in the scope of veridical operators (i.e., operators which entail the truth of the proposition they embed). Positive assertions are veridical, hence do not license PIs; adverbs like *tomorrow* and modal verbs, on the other hand, are nonveridical operators. Other nonveridical environments include negation, the scope of connectives like *without* and *before*, nonassertive speech acts (questions, imperatives, exclamatives), the protasis of conditionals, the scope of strong intensional verbs like *want* and *hope*, the future, the habitual, and the restriction of universal quantifiers. PIs are generally admitted in these environments.

2.2   *Polarity items as sensitive expressions*

Building on intuitions that were present also in the earlier literature, Giannakidou (1998) explains the limited distribution of PIs by appealing to their sensitivity. The limited distribution of PIs is due to the fact that PIs are *sensitive* expressions. Being sensitive means that PIs come with a semantic 'deficit' — a sensitivity feature, which may or may not have a morphological reflex, and which makes its bearer unable to assert or imply existence.[4]

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4   In the case of *wh-the-hell*, one may conjecture that *the hell* and its variants are the morphological locus of this sensitivity feature. But as Obenauer (1994:Chapter 3) notes, *the hell* (but not *on earth*; Obenauer notes other differences between *the hell* and *on earth* as well) also occurs on its own, in the absence of a *wh*-constituent, and in such contexts it does not seem to be a polarity item in any obvious way: while *I told him to get the hell out of here* is perfect, **I told him to get out of any office* is impossible.

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Given this general picture, we see that the semantics of being aggressively non-D–linked provides a prime candidate for PI–status. Being aggressively non-D–linked implies, first, that the individuals to be picked out by the *wh*-quantifier have not been introduced in the previous discourse, and second, that we do not know whether there will be such individuals associated with the *wh-the-hell*. These properties we will jointly refer to as 'non-givenness'; they bring *wh-the-hell* very close to dependent quantifiers in the sense of Giannakidou (1998).

2.3   *Aggressively non-D–linked* wh-*phrases and complete ignorance*

More specifically, our key hypothesis with respect to the semantics of the *the-hell* and its ilk is that they are *wh*-modifiers which express *complete* ignorance. Ignorance is an epistemic notion. It means that upon uttering a question like *Who the hell talked to her?*, the speaker does not know what the value of the *wh*-word that *the-hell* attaches to will be, or whether the *wh*-word will receive a value at all: it could well be that nobody talked to her.

Of course, in the case of regular *wh*-phrases we also do not know what the value of the *wh*-quantifier will be, which is why we are asking the question in the first place. But ignorance in the case of regular *wh*-phrases differs from that found with *wh-the-hell* in one key respect: regular *wh*-phrases are contextually restricted; they are understood as quantifying over discourse salient (sets of) individuals. Hence ignorance with regular *wh*-phrases is not absolute but relative to a set of discourse given values. It is not that we do not know *at all* what the value of the *wh*-word will be; we just do not know *exactly* which individual in that set will provide the value of the *wh*-word. This is a state of *partial* ignorance.

With *wh-the-hell* ignorance is *complete*. The *wh*-set is not contextually restricted, and *wh-the-hell* questions seem to allow any individual as the value of the aggressively non-D–linked *wh*-phrase, even quite unlikely candidates. This *domain extension* is reminiscent of the widening effect observed with FCIs and *any*, and, as in these cases, it can be understood as a scalarity requirement.

The state of complete ignorance that comes with aggressively non-D–linked phrases thus results from the very large domain of possible values which they open up. This creates vagueness: the speaker cannot offer a more precise clue to the hearer as to the set the *wh*-word will pick its value(s) from. And as a result, there is uncertainty as to whether there will be a possible value for *wh-the-hell*; since the domain is so extended, it is questionable whether there will be a value at all. Aggressive non-D–linking is thus understood as uncertainty regarding the value assigned to the *wh*-word. This semantics makes *the-hell wh*-phrases excellent candidates for PIs, and it also explains why negative rhetorical readings arise only in combination with modality.[5]

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5   There is much more to be said about the semantics of aggressively non-D–linked *wh*-phrases. Space restrictions preclude a detailed treatment here; we refer the reader to Den Dikken & Giannakidou (2000).

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3   The licensing of *wh-the-hell* in root *wh*-questions

With this established, let us proceed to addressing a key question, raised right at the outset, for our claim that aggressively non-D–linked *wh*-expressions are PIs: How are they licensed in root *wh*-questions? The ungrammaticality of (17b) follows from the fact that *wh-the-hell* lacks a licenser in this sentence.[6] But by the same token, it would now seem that *who the hell* in (17a), which apparently occupies the highest specifier in the clause, cannot be licensed either.

(17)   a   Who the hell would bought that book?   [= (1b)]
       b   *I know who the hell bought that book.   [= (5b)]

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 aggressively non-D–linked *wh*'s are PIs. For there is indeed a way of making sense of the contrast between (17a,b) in keeping with our approach to *wh-the-hell* — one which capitalizes on an independent difference between root and embedded *wh*-questions in English. As was noted by Pesetsky (1989), in root *wh*-questions topics surface to the left of the *wh*-moved *wh*-expression; in embedded *wh*-questions, by contrast, the topic follows the *wh*-phrase:[7]

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

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6   Notice that (i) contrasts markedly with (17b) (Richard Kayne, p.c.). This can be made to follow from an approach to *wh-the-hell* as a polarity item which can be licensed by negative implicatures: the *now* of *now I know* licenses the negative implicature that the speaker did not know before; it is this negative implicature which might be held responsible for the licensing of *wh-the-hell* in (i) (though presumably the focal stress on *now* plays a key role as well; Gennaro Chierchia, p.c.). (Note that *any* is not licensable in the context in (i), though it *can* indeed be licensed by a negative implicature in the complement of negative factive verbs like *regret*; as we pointed out in section 2.1, above, there are a variety of different types of polarity item (cf. the weak, strong, and superstrong PIs of Zwarts 1993, van der Wouden 1994, Giannakidou 1998, 1999), and evidently, *wh-the-hell* and *any* are not identical in all respects.)

(i)   Now I know who the hell stole my car.

7   Neither sentence in (18) is particularly brilliant (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 sentences like Pesetsky's examples in (18) 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) which combine topicalization and *wh*-movement in non-root clauses, where, as in English (18b), the topic follows the *wh*-phrase (*les hommes à qui les livres j 'ai donné* 'the men to whom the books I have given').

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There are various logical possibilities when it comes to analyzing the data in (18). One would be to keep the position of *wh*-phrases constant throughout all English *wh*-questions, and to have the position of topics vary. An alternative, pursued by Pesetsky (1989), is to do exactly the opposite: to keep the position of topics constant, and to have the *wh*-phrase raise to different positions in root and embedded *wh*-clauses.

We know from comparative work on *wh*-questions that languages differ with respect to where *wh*-phrases raise. In Hungarian, for instance, *wh*-expressions systematically raise to the same position that foci occupy, which is relatively low in the structure, below topics (cf. Brody 1995; see also section 4, below). In Dutch, on the other hand, *wh*-phrases without exception target the highest specifier position in the clause. So we know that languages treat *wh*-movement differently. The position of topics, by contrast, seems reasonably stable. We therefore adopt Pesetsky's (1989) strategy when it comes to accounting for the difference between (18a) and (18b).

In particular, we argue that *wh*-movement in English targets SpecCP in embedded clauses but SpecFocP in root contexts. With FocP located below TopP and TopP in turn located below CP, this then gives us the structures in (19), which deliver the desired result that topics precede *wh*-phrases in root clauses but surface to the right of *wh*-expressions in embedded *wh*-questions.

(19) 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 ... wonder $[_{CP}$ [*why*]$_j$ [C $[_{TopP}$ [*a book like this*]$_i$ [Top $[_{IP}$ *I should buy* t_i t_j]]]]]

Now, while languages differ among and within themselves with respect to where *wh*-phrases move, arguably all *wh*-questions, universally, share the fact that they feature a projection of C harboring the abstract *question operator* 'Q' (going back at least to Katz & Postal 1964, cf. also Baker 1970, Bresnan 1972, Pesetsky 1987; 'Q' may be morphologically realized in some languages, e.g. Japanese *ka* and Serbo-Croatian *li*). The question operator is responsible for the interrogative semantics of questions, and it provides the illocutionary force of a question, including yes/no-questions. In *wh*-questions in which no *wh*-phrase raises to SpecCP, the Q–operator binds the *wh*-phrase in SpecFocP under regular c-command, and this distinguishes the *wh*-focused constituent from non-*wh* foci.

The Q operator is nonveridical and known to license PIs in its c-command domain, as in (20). This, coupled with the approach to English *wh*-movement reflected in (19), straightforwardly accommodates the licensing of *who-the-hell* in (17a), and the difference between (17a) and (17b). In (17a), the *wh*-constituent is in SpecFocP. In this position it finds itself c-commanded by the Q–operator in CP, as in (21a). So an aggressively non-D–linked *wh*-phrase in SpecFocP is licensed via c-command by the nonveridical Q–operator, and is thereby perfectly licit. In embedded clauses, by contrast, the *wh*-phrase raises to SpecCP, a position outside the c-command domain of the Q–operator, as seen in (21b).

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(20)   Does anybody here speak Kurdish?

(21) a $[_{CP} C_Q [_{FocP} [\textit{who the hell}]_i [Foc [_{IP} t_i \textit{ bought that book}]]]]$

   b   *I know $[_{CP} [\textit{who the hell}]_i C_Q [_{IP} t_i \textit{ bought that book}]]$

Licensing an aggressively non-D–linked *wh*-phrase from *within* the embedded *wh*-question is hence impossible, and an external nonveridical licenser in the matrix clause is called upon.

4   Aggressively non-D–linked *wh*-phrases in multiple questions

The idea that *wh*-phrases may raise to SpecFocP 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 Focus position to the right of the complementizer in embedded finite clauses (cf. e.g. Brody 1995).[8] In a Hungarian multiple *wh*-question like *Who bought what?* all *wh*'s front and surface to the right of the complementizer.

(22) a   (Kiváncsi   vagyok,   hogy) *ki   mit   vett.
          curious   I-am   that   who what-ACC bought
   b   (Kiváncsi   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 it comes to the analysis of multiple *wh*-fronting in Hungarian: either (i) all *wh*'s are in the Focus domain, or (ii) only one *wh* is in SpecFocP, the remaining phrases targeting a higher functional projection. That the latter approach is likely to be correct is shown by the facts in (23) (due to Anikó Lipták, p.c.). While the Hungarian examples in (23a,b) are fine, their counterparts in (23a′,b′) are bad.

(23) a   *Ki mi a fenét* vett?   a′   **Ki a fene mit* vett?*
          who what the hell-ACC bought   who the hell what-ACC bought
   b   *Mit ki a fene* vett?   b′   **Mi a fenét ki* vett?*
          what-ACC who the hell bought   what the hell-ACC who bought

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8   This should entail that in a language of the Hungarian type, *wh-the-hell* should be licensed in all embedded questions, regardless of whether or not there is a licenser in the matrix clause: the Q–operator in the embedded C should be able to license *wh-the-hell* throughout. In point of fact, the Hungarian counterpart of (5b) is not rejected by all speakers — there are speakers for whom there is no contrast between it and the rendition of negative (6b). An interesting effect manifests itself in the Hungarian translation of (5b): unlike English *know*, Hungarian *tud* is ambiguous between a stative ('have knowledge') and an eventive ('find out') reading; and it is only on the latter that (5b) is acceptable. We believe this is a reflex of the fact that the eventive ('find out') reading licenses a negative implicature ('I did not know before'; cf. fn. 6, above); the stative ('have knowledge') reading, on the other hand, is veridical, which is what seems to block the licensing of *wh-the-hell* (i.e., *wh-the-hell* cannot be licensed in a veridical context, not even if a local Q–operator is present). The Hungarian facts require more careful study; we will relegate this to future research.

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Suppose that in Hungarian multiple *wh*-questions, the *wh* that is directly adjacent to the finite verb fronts to SpecFocP, with the *wh*'s preceding it sitting in SpecTopP positions (of recursive TopPs). On such an approach, the Hungarian data in (23) tell us that *wh-the-hell* is welcome to SpecFocP but not to SpecTopP. This of course makes perfect sense, from the perspective on aggressively non-D–linked *wh*'s that we have expounded. With *wh-the-hell* analyzed as a PI, the ungrammaticality of (23a',b') simply reduces to the fact that PIs are generally unacceptable as topics (cf. also (24b)): they do not assert existence (cf. section 2.2), and existence is a precondition for givenness (Giannakidou 1998:236–39), which in turn is the prerequisite for topic-hood (Reinhart 1982).

(24) 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.

Thus, the Hungarian data in (23) at once vindicate the PI approach to *wh-the-hell* and support the view that Hungarian multiple *wh*-questions employ the TopP–FocP structure introduced in (19).[9]
  It may now look surprising that, in contrast to Hungarian (24a,b), the English multiple *wh*-construction in (26a) is very poor on a pair-list reading (Lee 1994 in fact stars examples like (26a) outright), being interpretable only as a single-pair echo question. This is all the more interesting since the single-pair echo reading of (26a) is not, *per se*, a hallmark of English multiple questions featuring an aggressively non-D–linked *wh*-phrase: after all, the *embedded* question in (26b) does allow a pair-list multiple interrogation interpretation. So here we do get the root/embedded asymmetry that we fail to get in (25).

(25) 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.

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9   The facts in (23) are a particularly striking instance of É. Kiss's (1993) Specificity Condition — the requirement that in Hungarian multiple *wh*-fronting constructions, any *wh*-phrase except the last one in the series must be [+specific] or D–linked (cf. (i), below). For É. Kiss (2000:125–27), these non-final *wh*-phrases are all in DistP (Beghelli & Stowell 1997), which captures the fact that their semantics is that of distributive quantifiers. For our purposes here, TopP will do the job; in particular, it will allow us to establish a link between the ungrammatical examples in (23) and the PI–topicalization case in (24b). Note that, as É. Kiss (2000:186) points out in an entirely different context, Hungarian actually allows *any*–PIs to the left of a focus (cf. (ii); Tóth 1999). She takes the *any*–PIs in (ii) to occupy SpecDistP. If, as we argue, *wh-the-hell* is a PI, and if the *any*–PIs in (ii) are indeed in SpecDistP (despite their non-referentiality and non-specificity), then the contrast between (23a',b') and (ii) suggests that *wh-the-hell* cannot land in SpecDistP.

(i)   {*Miért/✓Mely okból}   ki   hazudott?
         why   which reason-for   who   lied
(ii)   Nem   hiszem, hogy   *bárki is/valaki is* AZ ÉN VÉLEMÉNYEMRE   lenne   kíváncsi
         not   I-think that   anybody   of my opinion   would-be   curious

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(26) a ᵀWho the hell is in love with who?
      b I am wondering/would like to know who the hell is in love with who.

The contrast in (26) follows if we assume that the *in situ wh*-phrase in a double *wh*-question is licensed in the Focus projection. On the standard assumption that sentences have a unique Focus position (É. Kiss 1987),[10] this means that *who the hell* in (26) cannot be licensed by Focus. Two options then remain, in principle: the subject-*wh* could be either in SpecTopP or in SpecCP. Of these two options, the former is ruled out in the case of (26) because *wh-the-hell* PIs cannot be topics, like PIs in general, as we saw in (24b). So only one operator position remains as the landing-site of *who the hell* in (26): SpecCP. The contrast between (26a) and (26b) is now as expected: while in (26b) *who the hell* is c-commanded by its licenser, the interrogative or directive matrix verb, in (26a) it is outside the c-command domain of the Q–operator in C, as seen in (27a); hence it fails to be licensed. A pair-list real question interpretation for (26a) is therefore unavailable.

(27) 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 (26a). To see how we can account for this interpretation, let us first get clearer on the representation of simple echo questions like (28). The syntax of such echo questions is that of ordinary declarative clauses: there is no subject-auxiliary inversion, and there does not appear to be a Q–operator in C. The latter is clear from the fact that in such echo questions, no polarity items can be licensed: (29) (from Lee 1994:section 1, 8) is ungrammatical. Recall that we held the Q–operator in C responsible for licensing PIs in questions like (20). Given the fact that the licensing of *anything* fails in (29), we are led to conclude that there is no Q–operator present in this example. That (28) is nonetheless interpreted as a question we believe is a result of the fact that the echo *wh*-constituent bears a Q–morpheme.[11] The structure of (28) can now be represented as in (30); the *wh-in-situ* will eventually make its way up to SpecFocP, in agreement with its being the focus of the sentence.

(28)   John said something to *who*?
(29)   *John said anything to *who*?
(30)   [$_{IP}$ John said something to [*who*+Q]]

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10   É. Kiss (1998) argues for multiple FocPs, but on the basis of scope facts presented in Surányi (2000), É. Kiss (2000) withdraws that proposal, returning to her original claim: there is one FocP per clause.

11   On Q–morphemes on *wh*-expressions, see Hagstrom (1998) and references therein. For the view that *wh*-phrases in echo questions are not to be treated as quantifiers, see e.g. Obenauer (1994:293, fn. 18).

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Our earlier example in (26a) (on its single-pair echoic 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, also a 'real' *wh*-constituent, *who the hell*. The presence of *who the hell* triggers the presence of a C with a Q–operator in the structure. And it is this Q–operator which licenses the PI *anything* in the example in (31), which should be contrasted with (29). Now, Q will also be able to license *who the hell* provided that, on the single-pair echoic reading of (26a) and (31), *who the hell* is not forced all the way up to SpecCP, as it is in (27a). On the pair-list real question interpretation of (26a), *who the hell* was forced up so high because the *in situ wh*-phrase took the SpecFocP 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 SpecFocP, adjoining to it, and forming a single *wh*-pair with it. In other words, in the derivation of (26a) on its single-pair echo reading, *who the hell* is in SpecFocP, 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. This is depicted in (32).[12]

(31)   Who the hell said anything to *who*?

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

In (26) we find 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 the aggressively non-D–linked *wh* is *in situ* — both members of the pair in (33) are ungrammatical:

(33)   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 which have overt-syntactic *wh*-fronting; cf. Pesetsky 1987 and Obenauer 1994:Chapter 3 for discussion of Japanese). From our perspective, the ungrammaticality of (33) can be analyzed as an Intervention Effect (cf. Linebarger 1980, 1987, Honcoop 1998, Beck 1996, Pesetsky 1998, *i.a.*), on a par with the deviance of examples like (34b), involving the PI *a red cent* (originally noted by Linebarger):

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12   Though (32) makes use of a Q–morpheme attached to certain *wh*-constituents, our approach should be kept strictly separate from Hagstrom's (1998) analysis of multiple *wh*-questions (see also Bošković 1998). For us, the *wh*-adjoined Q–morpheme is an earmark of echo questions; and adjunction of such a Q–marked *wh*-constituent to a 'real' *wh*-phrase gives rise to a single-pair interpretation (unlike in Hagstrom's analysis, on which 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). We will refrain from presenting a detailed comparison of our approach and that of Hagstrom (1998) here.

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(34) a John did*n 't* give Mary *a red cent.*

  b *John did*n '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*), (34b) fails because *every charity*, a scope-bearing element, intervenes between *-n 't* and the PI *a red cent* (cf. (35a)). In the same vein, the examples in (33) can now be ruled out as instances of the Intervention Effect. In (34b) we illustrate this for (33a): the question operator Q in C is the intended licenser of *who the hell*, but *who* in SpecFocP intervenes between Q and *who the hell*, blocking the latter's licensing.

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

This account carries over (33b) on the assumption that the malign intervener is the *trace* of the overtly moved *wh*-phrase (not the physical *wh*-phrase itself: the latter is in SpecCP 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 polarity item and its licenser.

  The ban on aggressively non-D–linked *wh*-phrases *in situ* is appreciably more general than an account in terms of an Intervention Effect would seem to be able to cover — in languages that cater for overt-syntactic *wh*-movement, aggressively non-D–linked *wh*-phrases are *never* licit *in situ*, not just in multiple *wh*-questions but in single *wh*-questions as well. Thus, as Obenauer (1994:Chapter 3) discusses in detail, while French allows *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?* 'he has seen who (non-echo)', the *wh-in-situ* strategy fails with *qui diable* 'who devil, i.e., who the hell' (cf. *Il a vu qui diable?*).[13] Moreover, Obenauer also points out that the ban on *wh-in-situ* is not peculiar to just *wh-the-hell*: any rhetorical question disallows it, and so do *wh*-exclamatives. Obenauer generalizes that *wh*-phrases whose variable is not assigned a value in the domain of discourse (either, as in the case of aggressively non-D–linked *wh*-phrases, because there is no value, or, as with *wh*-exclamatives, because the variable's value is located outside that domain) cannot be *in situ* at S–structure — at least, in those languages which allow overt-syntactic *wh*-movement (for in Japanese, *wh-the-hell* is possible *in situ, modulo* island constraints; see Pesetsky 1987).

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13 The reader might object that the ungrammaticality of **Il a vu qui diable?* does not reveal much about the syntax of *wh-the-hell* since (a) *qui diable* (in stark contrast to English *wh-the-hell*) is typical of the written language while (b) *wh-in-situ* in French is characteristic of the spoken vernacular. Obenauer (1994:Chapter 3) shows, however, that the same ban on *wh-in-situ* of *wh-the-hell* holds of Portuguese *wh-diabo*, which, unlike French *wh-diable*, is a feature of the spoken language.

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It seems unlikely that an Intervention Effect can be held responsible for the ban on *wh-in-situ* in all of these cases. And it may be worth while to pursue a unified account of all of these cases. Be that as it may (and we will return briefly to the question of what may cause the general ban on *wh-the-hell in situ* in section 5), the ungrammaticality of (33) certainly falls out as an Intervention Effect on the PI–analysis of *wh-the-hell* that we have expounded here.

Further support for the significance of Intervention Effects in the domain of aggressively non-D–linked *wh*-phrases comes from an observation first made by Lee (1994): as seen in (14) and (15), repeated here, unlike regular *wh*-phrases, aggressively non-D–linked ones have fixed wide scope with respect to quantifiers.

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

The lack of a wide-scope reading for *everyone* in (15) can be reduced to an Intervention Effect on our analysis, as the structure in (15b) shows: here, wide-scope QR makes the universal quantifier intervene between the Q–operator in C and its licensee, *what the hell* in SpecFocP.[14]

Lee (1994) also notes the ungrammaticality of (36). On the representation provided by our analysis (given below the sentence), the ill-formedness of this example can be made to follow as another instance of the Intervention Effect, this time with *wh-the-hell* intervening between Q and *anyone*.

(36)   *Who the hell did anyone see?
          *[Q   ... [*who the hell*   ... [anyone   ...]]]

The intended relationship between the boldface items in this structure fails since a scope-bearing element, *wh-the-hell*, is in between.[15]

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14   Notice that we cannot assume, as in 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.

15   Notice that polarity items themselves are harmless interveners: *John didn't give any charity a red cent* is good, in contrast to (34b). On the other hand, *wh-the-hell* does count as a harmful intervener: it is not just a polarity item, it is also a *wh*-operator. It is this latter property which makes *who the hell* break the desired link between Q and *anyone* in the structure in (36).
          The story about the breakdown of PI–licensing in *wh-the-hell* questions is more complicated than this — for (a) PIs *can* be licensed in the subject position of *wh-the-hell* questions featuring adjunct *wh*'s, and (b) PIs are systematically legitimate in *wh-the-hell* questions if they find themselves in *object* position:

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5   A note on pied-piping

In this paper, we have seen that the hypothesis that aggressively non–D–linked *wh*-phrases are PIs sheds light on a variety of puzzles in the domain of distribution and interpretation of *wh-the-hell*, including the unavailabiltiy of regular pair-list readings for multiple questions featuring *wh-the-hell*, and the question of why *wh-the-hell* is impossible *in situ* in multiple *wh*-questions. We have shown that *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' but a single-pair echo question instead. Along the way, we found that overt *wh*-movement in English targets SpecFocP in root *single* questions (but not in root *multiple* questions, where the *in situ* *wh*-phrase is associated to Focus), and SpecCP in embedded contexts, confirming and extending claims made in Pesetsky (1989).

One last restriction on aggressively non-D–linked *wh*-phrases which would at first sight appear to fit in perfectly with our general claim that these are polarity items is Pesetsky's (1987) observation that these cannot be pied-piped by their containers: while (37a) is certainly not impeccable to begin with, (37b) is totally impossible. The link with *any*-type polarity items seems to assert itself here once again: *any*-type PIs cannot be pied-piped (under A'–movement) either (cf. (38b) and (39b)).

(37)   a.   ?Pictures of *whom* cost the most at the sale?
        b.   *Pictures of *who the hell* cost the most at the sale?
(38)   a.   Pictures of John, I would never throw away.
        b.   *Pictures of *anyone*, I would *never* throw away.

(i)   Why the hell did anybody come?   [surprise/*rhetorical]
(ii)   Who the hell saw anyone?

For (ii) an account is forthcoming which capitalizes on the idea that the Q–operator of questions originates, not in C but in I, and raises from I to C (cf. Rizzi 1991 for a similar suggestion regarding the [wh]-feature of questions). If Q is born in I, upon raising to C it will leave a trace there which will serve as a licenser of the NPI in object position, with no harmful intervener spoiling the fun. (In (36), even with Q originating in I, the result will still be ungrammatical: the trace of Q does not c-command the subject–PI.)

The contrast between (36) and (i) is harder to account for. Lee (1994) stresses (for the corresponding Spanish examples, but the same seems to be true for the English cases) that (i) allows only a surprise reading, not the rhetorical reading which is otherwise characteristic of *wh-the-hell* questions. Conceivably, in *wh-the-hell* questions with surprise readings, the Foc–head bears a feature which is capable of licensing polarity items in subject position, in keeping with the locality condition on NPI licensing. But at this time we cannot confidently put our finger on what is going on in (i) — much depends here on the proper syntactic and semantic representation of the surprise reading, a topic we cannot go into here. (See Lee 1994 for a different — but, we believe, inadequate — account of the facts in (15), (36) and (i)/(ii). We cannot go into the details of that analysis here.)

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(39)   a.   I don't think that pictures of John, I would ever throw away.

          b.   *I do*n't* think that pictures of *anyone*, I would ever throw away.

There is reason to believe, however, that the parallels in (37)–(39) are accidental, and cannot serve as additional support for a PI approach to *wh-the-hell*. In closing, we will first comment briefly on why these parallels are spurious, and then proceed to a sketch of an account of the ban on pied-piping with *wh-the-hell*.

        The first thing to note is that, though the ungrammaticality of (38b) and (39b) at first blush would not seem to reduce to that of (24b) (after all, the PI is not itself the topic of these sentences), it seems that the *any*-PI embedded within the noun phrase topic in these examples can make its presence felt all the way up at the level of its container.

(24b)   *I don't think that any linguists, I will invite to the party.

That this is so is suggested by Richard Kayne's (personal communication) observation that, just as in (24b), we seem to find a noticeable improvement in (39b) when negative inversion is applied in the embedded clause: just like *?I don't think that any linguists would I invite to the party* is an improvement over (24b), so also *??I don't think that pictures of anyone would I ever throw away* is appreciably better than (39b).

        The very fact that *any* is c-commanded by the matrix negation seems to turn it into a derived negative quantifier of sorts, capable of triggering negative inversion *and* of having its container trigger negative inversion (analogously to *Pictures of no-one would I ever throw away*). The latter suggests that the features of *any* (like the features of *no*) can make their way up to its container — and if we strengthen this by saying that these features in fact *must* so raise (whenever possible), we can accommodate the ungrammaticality of the b–examples in (38)–(39) along the same lines as that of (24b), in terms of a ban on topicalization of polarity items.

        That this is presumably on the right track is suggested by another observation due to Kayne (p.c), which prompted the parenthesis 'whenever possible' in the preceding sentence: while the topicalization examples in (38b) and (39b) are impossible (with the latter improving if negative inversion is applied, in which case we are dealing with focalization instead), the example in (40) is acceptable. Here, apparently, *any* does not assert itself at the level of the topic noun phrase; i.e., it does not turn this noun phrase into an impossible topic. Intuitively, the reason why (40) does not violate the restrictions on possible topics is clear: *any* in (40) is embedded within a relative clause, and general island constraints preclude the propagation of the features of *any* beyond the relative clause up to the level of the relativized noun phrase.

(40)   [Pictures that *anyone* takes of me], I *never* throw away.

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This intuition can be given formal substance if we adopt a perspective on propagation of features which treats it in terms of LF feature movement (on LF feature movement, see Chomsky 1995) — i.e., if we assume that the way in which the features of *any* or *no* manage to make their way up to their container is not via some sort of percolation but via movement. This movement perspective on feature propagation in turn will allow us to make sense of the behavior of *wh-the-hell* under pied-piping, as in (37b).

It should be clear at the outset that the example in (37b) cannot be analyzed in the same terms as (38b) and (39b): after all, we are not dealing with topicalization here but with *wh*-movement to SpecFocP. Instead, what seems to lie at the root of the deviance of (37b) is, in a way, precisely the opposite of what causes the ungrammaticality of (38b) and (39b) — while *any*-PIs and negative quantifiers apparently *must* transmit their features up to their containers (whenever possible), *wh-the-hell* phrases *cannot* do so at all. As a consequence, there is no chance of successfully checking the *wh*-feature on C in the example in (37b): propagation of this feature to the *picture*-noun phrase is impossible, and extraction of *wh-the-hell* from out of the *picture*-noun phrase in SpecFocP is out of the question as well. The only way in which *wh-the-hell* can survive as a subconstituent of a larger phrase is for it to be on the highest left branch of the container — as in the examples in (41) (inspired by a comment from Anna Szabolcsi), which are a marked improvement over (37b), while (42) does not in any way seem to improve on (38b).

(41)   a.   [?]*Who the hell*'s pictures cost the most at the sale?
        b.   [?]*Who the hell*'s shoes are on the table?
(42)   *Anyone's pictures, I would *never* throw away.

In (41), *wh-the-hell* can 'peek out' of the *picture*-noun phrase thanks to its being on the highest left branch (cf. Kayne 1994 for binding evidence), and checking of the *wh*-feature is thus rendered possible; in (42), ungrammaticality persists owing to the fact that the features of *any* are propagated to their container just as in (37b), resulting in a violation of the general ban on *any*-PIs (and their containers) as topics.

Why should it be that *wh-the-hell* differs from *any*-PIs when it comes to the promotion of features up to a container? The LF feature movement approach to propagation of features adopted in the foregoing gives us a window on this question. On this view, we can reduce the fact that *wh-the-hell* cannot propagate its features up to its container to a general incapacity on the part of aggressively non-D–linked *wh*-phrases when it comes to LF movement: they cannot be *in situ* (at least, not in languages that allow overt movement of *wh-the-hell*; see Pesetsky 1987 on Japanese), which, on the assumption that *in situ wh*-phrases are subject to movement at LF, is tantamount to saying that their features — for whatever reason (we suspect that this has something to do with the internal structure of *wh-the-hell* phrases, but since we have little clue as to the details of that structure, we decline to speculate at this time) — are not subject to LF attraction.

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Of course, this introduces a difference between *any*–PIs and *wh-the-hell* phrases.[16] It so happens that *wh-the-hell* has a handicap which *any*–PIs do not, quite independently of its status as a polarity item. But clearly, this does not in any way jeopardize our general claim that both are members of the set of polarity items. It is this claim which we have sought to adduce a variety of supporting evidence for in this paper. The overall conclusion that we hope we managed to put across in these pages is that *wh-the-hell* expressions are polarity items — they are dependent on a c-commanding licenser from the general pool of elements which 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 in a variety of languages.

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16   It also introduces a difference between *wh-the-hell* and regular *wh*-phrases in exclamatives. As Obenauer (1994:Chapter 3) notes, the latter are subject to substantially less stringent constraints on pied-piping than *wh-the-hell*. The generalization, for regular *wh*-phrases in exclamatives, appears to be that they can be pied-piped if and only if pied-piping is the only chance of obtaining a grammatical result (i.e., if stranding is impossible).

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