

An expressive answer. Some considerations on the semantics and pragmatics of *wh*-exclamatives*

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1 Introduction

The usual amazement about exclamatives is fully justified, because it is difficult to deal with them exclusively from the viewpoint of truth-conditional semantics, and, hence, they have been an exotic object of study. Indeed, we do not even have a clear-cut definition of what constitutes an exclamative, so the term refers to a wide range of syntactic constructions. The kind I am concerned with in this paper is *wh*-exclamatives. They are especially interesting, because they are analogous to *wh*-interrogatives in many respects, but the speaker uttering a *wh*-exclamative is committed just like the speaker uttering a declarative.

In this paper I focus on a few puzzles that have to do with the semantics and pragmatics of *wh*-exclamatives in both Catalan and English, and I attempt to answer two basic questions, namely:

- In what way is the semantics of *wh*-exclamatives different from the semantics of *wh*-interrogatives?
- In what way is the discourse contribution of *wh*-exclamatives different from the contribution of declaratives?

In order to do so I will look at a few puzzles that highlight the idiosyncratic behavior of this type of *wh*-clause and I will present an analysis that includes interesting insights from the current theories about *wh*-exclamatives. I consider three major approaches, which I call *the question approach* (Gutiérrez-Rexach (1996), Zanuttini & Portner (2003)), *the degree approach* (Castroviejo 2006) and *the non-exclamative approach* (D'Avila (2002), Abels (2005)). More specifically, I claim that the different pragmatic behavior of *wh*-interrogatives and *wh*-exclamatives stems from differences in parameters such as speaker commitment and the contribution of intonation. Moreover, I argue that *wh*-exclamatives make expressive speech acts insofar they are meaningful contributions thanks to evaluative intonation (henceforth EI). Third, I propose that EI composes at the Conventional Implicature tier (CI tier) with a set of propositions, only if they involve a linear order.

The structure of the paper is as follows: I first introduce the relevant background in terms of data and previous literature; then I present my analysis in three steps. In section 3 I spell out the conditions that have to be met in order for the speaker

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to be able to utter a *wh*-exclamative, in section 4, I concentrate on the monotonicity effect of EI, and in section 5 I consider EI an expressive and I relate this to the singular pragmatic behavior of *wh*-exclamatives. In the conclusions, I suggest some interesting topics for further research.

2 Background

My object of study in this paper is illustrated in the examples below:

- (1) a. *How* long this flight is!
b. *Com* és de llarg aquest vol!
how is of long this flight
'How long this flight is!'
c. *Quanta* gent que hi ha a l'aeroport!
how many people that there is at the airport
'How many people there is at the airport!'

What these sentences represent is *wh*-exclamatives introduced by a *wh*-phrase in both Catalan and English and which, crucially, can also introduce a *wh*-interrogative, as the examples in (2) show:

- (2) a. How long is this flight?
b. *Com* és de llarg aquest vol?
c. *Quanta* gent hi ha a l'aeroport?

For the purposes of this paper I will skip surface syntactic differences between examples (1) and (2) such as the fact that *wh*-interrogatives – but not *wh*-exclamatives – involve subject-verb inversion, or the fact that *wh*-exclamatives in Catalan – but not *wh*-interrogatives – include an optional complementizer between the *wh*-phrase and the verb. I will concentrate on what all these sentences have in common, namely that they are introduced by the same *wh*-word and that this *wh*-word makes reference to degrees (*how*, *com*) or amounts (*quant*).

2.1 The puzzles

A number of tests have been proposed in the literature (e.g., Elliott (1974), Grimshaw (1979), Zanuttini & Portner (2003)) to argue that *wh*-exclamatives should be treated as a clause type and different from *wh*-interrogatives. I consider the three puzzles below the most relevant ones to understand the essence of *wh*-exclamatives.

First, even though they are *wh*-clauses that stand alone as matrix sentences, they do not make questions (Zanuttini & Portner 2003):

- (3) a. A: How tall Bill is! B: # 1.85 meters tall.
b. A: How tall is Bill? B: 1.85 meters tall.
- (4) a. How tall Bill is! # 1.85 or 2 meters tall?
b. How tall is Bill? 1.85 or 2 meters tall?

In (3) we see that *wh*-exclamatives cannot be answered, whereas *wh*-interrogatives can, because the latter, but not the former, can perform an interrogative speech act. What we observe in (4), on the other hand, is that questions can be narrowed down by another question, but this is not available for *wh*-exclamatives, as Zanuttini & Portner (2003) point out.

Second, although *wh*-exclamatives do not work as a question, they do not work as an assertion, either, as (5) shows (Grimshaw (1979), Zanuttini & Portner (2003)).

- (5) a. A: How tall is Bill? B1: # How tall he is! B2: Very tall.
b. A: Is Bill tall? B1: # How tall he is! B2: Very tall.

From the previous examples we can see that B1 is always an infelicitous answer independently of whether we have an information question or a *yes/no* question. In contrast, B2, which intuitively contributes a similar meaning, is appropriate in this context.

Lastly, it is relevant to observe that only a subset of the set of *wh*-words can introduce *wh*-exclamatives (Elliott (1974), Zanuttini & Portner (2003)).

- (6) a. How tall Bill is!
b. # Who I saw at that party!
c. # What I found in my room!
d. # Where you went on vacation!

Interestingly, this restriction does not extend to embedded *wh*-exclamatives.

- (7) It's amazing ...
a. ...how (very) tall Bill is.
b. ...who I saw at that party.
c. ...what I found in my room.
d. ...where you went on vacation.

In the following subsections I make an overview of the tenets defended by the previous literature and I summarize which are the main points I incorporate in the alternative account I present here.

2.2 The question approach

I call *the question approach* the proposal made by Zanuttini & Portner (2003) (but see also Gutiérrez-Rexach (1996)) according to which *wh*-exclamatives have the semantics of questions (more specifically a Hamblin/Karttunen set of possible answers). Zanuttini & Portner argue that *wh*-exclamatives constitute a clause type on their own by virtue of having an additional ingredient that derives the exclamative meaning, namely a factive morpheme.¹ In particular, they propose that once this morpheme co-occurs with the set of alternatives derived by the [+wh] component, a pragmatic inference called *widening* arises. Importantly widening corresponds to a conventional scalar implicature such that the denoted proposition lies at the extreme end of the contextually salient set. To make it clearer, Zanuttini & Portner argue that the following equivalence holds:

¹In Gutiérrez-Rexach's analysis, this ingredient is an EXC operator.

(8) [[What things John eats!]] \equiv [[What things does John eat?]]

That is, as far as the semantics, *wh*-exclamatives and *wh*-interrogatives are alike, and widening is responsible for their differences. In (9) two possible domains of quantification that are at stake when uttering *What things John eats!* are illustrated. Crucially, widening broadens the quantification domain associated with the *wh*-word, from D_1 to D_2 . Imagine a situation in which we are talking about chili peppers. When the speaker utters *What things John eats!*, s/he is not only considering the set of regular answers to *What things does John eat?* (D_1) but also the non-standard ones (D_2), and s/he conveys that the propositions that are part of the widened domain (i.e., $D_2 - D_1$) are presupposed. In the example, we presuppose that John eats güeros and habaneros, which are the most unlikely chili peppers to be eaten.

- (9) a. $[[S_{D_1}]] = \{\text{eats}(\text{John}, \text{poblanos}), \text{eats}(\text{John}, \text{serranos}), \text{eats}(\text{John}, \text{jalapeños})\}$
 b. $[[S_{D_2}]] = \{\text{eats}(\text{John}, \text{poblanos}), \text{eats}(\text{John}, \text{serranos}), \text{eats}(\text{John}, \text{jalapeños}), \text{eats}(\text{John}, \text{güeros}), \text{eats}(\text{John}, \text{habaneros})\}$

To conclude, widening is claimed to be the formalization of the intuitive notions of unexpectedness, extreme degree and surprise, which are usually referred to in descriptive approaches to *wh*-exclamatives. Also, widening is viewed as the sentential force of *wh*-exclamatives, i.e., what makes them a clause type.

2.3 The degree approach

Under the degree analysis in Castroviejo (2006), *wh*-exclamatives also represent a clause type different from *wh*-interrogatives. In particular, they are viewed as degree constructions that have a singular way of updating the common ground. The motivation for treating *wh*-exclamatives as degree constructions comes from Catalan data such as the following, where *tan* ('so') heads a DegP in both result clause constructions ((10)) and *wh*-exclamatives ((11)).

- (10) En Ferran ha preparat un pastís **tan** bo que ha guanyat el
 the F. AUX.he prepared a cake so good that AUX.he won the
 concurs.
 contest

'Ferran made such a nice cake that he won the contest.'

- (11) Quin pastís **tan** bo que ha preparat en Ferran!
 what cake so good that AUX.he prepared the F.

'What a nice cake Ferran made!'

The difference between (10) and (11) has to do with their discourse contribution. While the former performs an assertion (i.e., it erases all the worlds incompatible with the proposition it denotes once it is accepted by the rest of discourse participants), the latter involves two kinds of meanings, none of which can have the effect of an assertion. On the one hand, there is the descriptive meaning that corresponds to the degree construction and which is treated as backgrounded information, and on the other hand, there is an implicated meaning identified as the speaker's attitude towards a degree.

2.4 The non-exclamative approach

In the non-exclamative approach I include the works of D’Avis (2002) and Abels (2005), who look at *how*-exclamatives in embedded contexts. Specifically, they consider these *wh*-clauses as arguments of exclamative (also *surprise*) predicates such as *it’s amazing* or *it surprises me*, and argue that we do not need any extra exclamative feature to derive the exclamative flavor of such clauses, because this stems from the semantics of the predicate, which takes a set of propositions as argument. In other words, at least as far as *how*-clauses is concerned, we do not need to postulate the existence of an exclamative clause type that differs from *wh*-interrogatives.

2.5 Previous assumptions

The analysis I propose in this paper subsumes the best insights of the three previous proposals. To begin with, along with Zanuttini & Portner (2003), I make use of the traditional Hamblin (1973)/Karttunen (1977) analysis of *wh*-interrogatives, but, similarly to D’Avis (2002) and Abels (2005), I assume that this corresponds to the semantics of any *wh*-clause.²³ More precisely, I consider *wh*-clauses to constitute a clause type and interrogatives and exclamatives to be their two possible stand alone realizations.⁴ On the other hand, the degree component of *wh*-exclamatives has to do with the requirement that the set of alternatives be a set of propositions that come ordered for free (a condition that is met when the *wh*-word is also a degree word). Finally, in this new approach I rely on EI, which conveys the meaning associated with attitude toward degree modifiers like *surprisingly* (Katz (2005) and Nouwen (2005)).

I understand that there is a domain of meaning that corresponds to regular assertive meaning (assertion tier) and another domain where expressive meaning is computed (CI tier) (Potts 2005). I assume that declaratives make assertions by virtue of their syntactic form, and speaker commitment is the default option (Gunlogson 2003). I take verb-subject inversion and *do*-support to be a marker for lack of speaker commitment in English, so declarative word order in *wh*-exclamatives is the default one. In a nutshell, a *wh*-exclamative makes a meaningful contribution to discourse thanks to EI, which, crucially, does not update a common ground like an assertion, because its meaning is composed at the CI tier.

²I leave aside free relatives. The possibility of proposing a uniform analysis that also covers free relatives is an appealing idea that is out of the scope of this paper. See for instance Jacobson (1995).

³For a sentence like (1a) I assume the denotation in (1b), where *d* stands for *degree*.

- (1) a. [[How tall Bill is]
b. {Bill is d_1 -tall, Bill is d_2 -tall, Bill is d_3 -tall . . . , Bill is d_n -tall . . . }

⁴I do not support the idea that clause typing is directly related to the discourse contribution of sentences. Hence, clause typing is a purely grammatical mechanism and constructions that belong to the same clause type share some semantic properties, but they need not have the same effect in discourse.

3 Conditions on matrixhood

In this section I establish two conditions that *wh*-clauses must meet in order to be able to be interpreted as *wh*-exclamatives. The first one refers to the need of a specific intonation that presupposes a knowledgeable speaker and which I call *evaluative intonation*. The second one is a condition on the kind of set that the *wh*-word must generate, namely a set of propositions that form a linear order.

3.1 Evaluative intonation

Along the lines of D'Avis (2002), I propose that the first basic ingredient of *wh*-exclamatives is a non-neutral intonation, which I call *evaluative* (EI). In the spirit of Sæbø (2005), I claim that *wh*-exclamatives are of a semantic type that cannot make a meaningful contribution to discourse. In my account, a set of propositions cannot make an assertion, simply because a set of alternatives does not correspond to a single proposition, which is able to update the common ground by erasing the worlds that are incompatible with the proposition denoted by the sentence once it has been accepted by the rest of the discourse participants (Stalnaker 1979).

In fact, only by introducing a set of propositions into a discourse, the speaker is not expressing his/her commitment towards any of them and, consequently, s/he is not asking the discourse participants to either accept or reject the conveyed information (Truckenbrodt 2006). That is why we need some mechanism to turn the *wh*-clause into a meaningful utterance. Observe that we do not have available any means to convey the meaning that can be represented by an embedding verb like *know* or *find out*.

(12) I know how tall Bill is. \neq # How tall Bill is.

There is not an intonation that corresponds to the meaning conveyed by cognitive factive predicates or any propositional attitude verb. Uttering a *wh*-exclamative with a declarative intonation triggers infelicity. However, the speaker can make use of two types of intonational contours in combination with a set of propositions. On the one hand, we have question intonation, which is the speaker's strategy to ask to the addressee to pick one of the alternatives. Note that this kind of speech act requires in languages like English that word order be not the default one, but one which represents the speaker's lack of commitment. On the other hand, we have EI, which shows the emotional state of mind of the speaker that results from unexpectedness.

***Wh*-exclamatives do not make assertions because just by introducing a set of propositions to discourse, the speaker uttering a *wh*-exclamative does not single out the one that is true in the actual world.**

EI is similar to emotive predicates in many respects, one of which being that they are all presupposition triggers. The relevant presupposition is that we accommodate that the speaker is knowledgeable, i.e., s/he knows which one of the propositions of the set is true. Consider the following examples:

(13) a. I'm surprised at how old Paul is, # but I don't know how old he is.

- b. I don't know how old Pau is, # but I'm surprised at how old he is.
- (14) a. A: How old Pau is!
 b. B: Yeah, he's 100 years old.
 c. A: # Oh really? I didn't know.

It is thus straightforward why *wh*-exclamatives cannot perform questions: on the one hand they lack the formal features that convey the lack of speaker commitment (actually, they involve the presupposition according to which the speaker is knowledgeable), and on the other hand, they do not include the intonation contour that is able to convey the message that the speaker wants from the addressee that s/he picks one of the propositions in the denotation of the *wh*-clause.

***Wh*-exclamatives do not make questions because they do not have the appropriate intonation and because they do not have the grammatical markers that are associated with lack of speaker commitment.**

3.2 A linear order

So far, observe that we have not made clear why we cannot have a *wh*-exclamative introduced by *who* or *when* even if we use EI. To explain the unacceptability of # *Who I saw at that party!* I appeal to the kind of sets *how* and *who* generate. In this subsection I will show that EI is a function that must take a set whose propositions come ordered for free and in the following ones I will argue why this is so.

This condition obtains if the propositions in the set include in the restriction a gradable property or an amount, both of which involve the \prec relation (i) and the proposition on the right entails all the propositions on its left (ii). In other words, we want sets that have a linear order based on the inclusion relation. For example:

- (15) a. [[how tall Bill is]]
 b. {Bill is d_1 -tall, Bill is d_2 -tall, Bill is d_3 -tall, ..., Bill is d_n -tall}
- (16) a. [[quantes mentides diu aquest polític]]
 'How many lies this politician tells.'
 b. {this politician tells 2 lies, this politician tells 3 lies, ..., this politician tells n lies}

In the previous examples, which are acceptable *wh*-exclamatives, a gradable property (e.g., tallness) and an amount (of lies) are responsible for the natural \prec relation between propositions, and it is also the case that every proposition entails the one on its left (e.g., if Bill is d_3 -tall, then he must also be d_2 and d_1 -tall). In other words, these sets meet the inclusion relation condition and, thus, they are suitable *wh*-exclamatives.

Let us now look at the unacceptable cases to realize that the sets these *wh*-words generate do not comply with conditions (i) and (ii) above.

- (17) a. [[who I saw at the party]]

- b. {I saw Mary at the party, I saw John at the party, I saw Peter at the party, I saw Mary and John at the party, I saw Mary and Peter at the party, I saw Mary, John and Peter at the party }

The set in (17b) clearly shows that, given a universe that contains {Mary, John, Peter}, no natural order arises and it is not the case that every proposition entails the one on its left. For example, the fact that I saw Peter at the party does not entail that I saw Mary.

Only *wh*-clauses introduced by *wh*-degree/amount words can make *wh*-exclamatives, because they generate sets of propositions that involve a linear order.

At this point the proposal works smoothly for *how*-exclamatives, but it does not extend straightforwardly to other *wh*-exclamatives, like *What things John eats!*. In contrast to Zanuttini & Portner (2003)'s analysis in (9), I propose that in these cases there is an unpronounced gradable property that is inferred from context and that is able to order the propositions according to a dimension. Consider the example below:

- (18) a. What things John eats!
 b. {John eats d_1 -P things, John eats d_2 -P things, John eats d_3 -P things, . . . , John eats d_n -P things }

P in the example could be replaced by *hot*, *exotic*, *disgusting*, etc., depending on the context of utterance. Observe that under this analysis, the inclusion relation is maintained, but this is not so in (9) (we cannot imply that John eats güeros from the fact that he eats habaneros). It is also important to bear in mind that the property *P* is not interpreted restrictively, i.e., it does not intersect with *N*, but provides a dimension according to which the propositions are ordered. Let us see an example with an overt adjective. Here we have two possible interpretations depending on whether the adjective is interpreted restrictively or non-restrictively:⁵

- (19) What hot things John eats!
 a. {John eats d_1 -hot things, John eats d_2 -hot things, John eats d_3 -hot things, . . . , John eats d_n -hot things } NON-RESTRICTIVE
 b. {John eats d_1 -P [hot things], John eats d_2 -P [hot things], John eats d_3 -P [hot things], . . . , John eats d_n -P [hot things] } RESTRICTIVE

The set in (19a) is ordered w.r.t a scale of hot-ness, because *hot* is interpreted as a non-restrictive modifier, whereas in (19b) we infer that the set is ordered w.r.t a contextually salient gradable property *P*. Observe that the adjective *hot* is here intersected with *things*, so that John eats things that are hot to a standard degree⁶ and

⁵I refer the reader to Castroviejo (2008) for an analysis of non-restrictive modifiers in exclamative contexts.

⁶That is, *hot* has merged with POS before merging with *things*. Cf. von Stechow (1984a).

they have an additional property whose degree of P varies in every proposition. For example, John eats hot things that are disgusting or delicious to a certain degree.⁷

In the next section I provide a principled account for this singular restriction, which has to do with EI being a downward monotone predicate.

4 Monotonicity

In the previous section we have seen that EI involves a restriction such that it can combine with a *wh*-clause only if it denotes a set of propositions that are related by inclusion, that is, if every proposition entails the proposition on its left. In this subsection I argue that this is so, because EI is a downward monotone predicate, which must take an upward monotone function as argument.

4.1 Evaluative adverbs

Monotonicity has been used to refer to gradable predicates like *tall* (Heim 2001) and evaluative adverbs like *surprisingly* (Nouwen 2005). Assume gradable adjectives are measure functions of type $\langle e, d \rangle$ (Kennedy 1999). Then, the adjective's upward monotonicity can be defined as follows:

$$(20) \quad \text{A function } f \text{ of type } \langle e, d \rangle \text{ is } \text{MON}\uparrow \text{ iff } \forall x \forall d \forall d' [f(x) = d \wedge d' \prec d \rightarrow f(x) = d']$$

(20) amounts to saying that, given that 1.85m exceeds 1.80m, then if Bill is 1.85 meters tall, this implies he is also 1.80 meters tall.

Now let us turn to the downward monotonicity that evaluative adverbs exhibit. Below is Nouwen (2005)'s definition:

$$(21) \quad P \text{ is } \text{MON}\downarrow \text{ iff } p \rightarrow p' \Rightarrow P(p') \rightarrow P(p)$$

In prose, if Bill is 1.85 meters tall, this entails he is also 1.80 meters tall. But if one utters *Bill is surprisingly tall* and he is 1.85 meters tall, this will not necessarily hold if he is 1.80 meters tall. On the contrary, if one utters the same sentence when he is 1.80 meters tall, the proposition will be true if he is 1.85 meters tall.

It follows that only gradable adjectives (i.e., upward monotone functions) combine with *surprisingly* in such a way that the adverb reverses the entailment patterns of the adjective. That is why we can say *surprisingly tall* but not *surprisingly dead/imprisoned*. The evaluative adverb asserts that Bill has a degree of tallness that is surprising and it includes a constraint such that if the degree were higher, he would also be surprised (what Katz (2005) calls an *at least entailment*).

Crucially, this reversal of entailments is due to the unexpectedness ingredient that is part of the meaning of evaluative adverbs, which also include *remarkably*, *fortunately*, *unfortunately*, *revoltingly*, *nauseatingly*, etc. This is exactly what *surprisingly* and EI have in common: they both include unexpectedness as part of their meaning and that is what makes them behave like downward monotone predicates. Note that if we utter *how tall Bill is!* when he is 1.80 meters tall, we are expected

⁷The same applies to the Catalan example in (11). Unfortunately I cannot deal with the cross-linguistic differences in this paper.

to behave likewise if he were 1.85 meters tall, but the other way around does not hold. Now we need to define monotonicity in terms of sets of propositions. This is my assignment in the next subsection.

4.2 A formal analysis of EI

EI takes a set of propositions π that fulfill the structural condition (22), and it imposes the material condition (23).

- (22) Let $\pi \in \wp(\wp(W))$, then ...
 $p, q \in \pi \rightarrow [p \subseteq q \vee q \subseteq p]$
- (23) Let $Exp : W \rightarrow \wp(\wp(W))$, then ...
 $\exists p[w \in p \ \& \ p \notin Exp_w \ \& \ (\forall q \in Exp_w \cap \pi) \ p \subseteq q]$

Condition (22) makes sure the propositions in the set exhibit the inclusion relation, which is crucial for our notion of monotonicity applied to the set π . I propose that the downward monotonicity effect of an evaluative adverb like *surprisingly* (i.e., the presupposition that if Bill were taller, the speaker would still be surprised) corresponds to a restriction that makes sure that for every false proposition p , it is the case that p entails any of the propositions q that are true in the actual world. In other words, (22) is a generalization of the more specific condition below:

- (24) $\forall w \forall p, q[w \notin p \ \& \ w \in q \Rightarrow p \subseteq q]$

(23) requires that there be one proposition p that is true but not part of the set of the speaker's expected propositions in the actual world Exp_w (i.e., the strongest true proposition) and that for every proposition q that is a member of both Exp_w and π , p entails q .

Summing up, EI divides the set π into three categories: we have (i) the strongest true proposition in π , (ii) the set of propositions that, even if they are weak, they are also true (which, incidentally, include the set of expected propositions) and (iii) the set of false propositions.

The fact that we add this linear order requirement allows us to establish a clear cut distinction between *wh*-phrases that may and may not introduce a *wh*-exclamative. Let us illustrate it with an example.

- (25) a. How tall Bill is!
 b. strongest true proposition: Bill is 1.90 meters tall.
 c. expected proposition₃: Bill is 1.78 meters tall
 d. false proposition₈₉: Bill is 2.10 meters tall.
- (26) a. # Who I saw at the party!
 b. strongest true proposition: I saw Ann, Peter, Allan and John.
 c. expected proposition₄₃: I saw Ann and Peter.
 d. false proposition₁₁: I saw Allan and Peter.

In (25) we observe that it is true for all false propositions that they entail the true ones (we have picked here proposition₈₉ as a random example), and it is also

the case that the strongest true proposition entails any of the expected ones, even if the former is unexpected. When it comes to (26), though, we see that the strongest true proposition may entail the expected ones (in this particular scenario), but it is not necessarily so that all false propositions entail the strongest true one.

To conclude, note that under this approach, the ill-formedness of # *Who I saw at that party!* is not due to a semantic-type clash. Rather, the *wh*-argument does not fulfill the conditions imposed by the predicate and, hence, the sentence cannot be interpreted, just like we do not know how to interpret *John is surprisingly imprisoned*.

5 Expressive meaning

In this section I argue that EI shares many properties with the so-called *expressives* like *damn* in Potts (2007)'s account. Accordingly, EI is a predicate that operates at the CI tier and takes the *wh*-clause as argument. Most importantly, this consideration explains straightforwardly why EI is not a proper answer to a question.

5.1 EI as an expressive

Interestingly, Potts (2005) disregards intonation as an instance of CI, but he seems to refer to the comma intonation in appositive sentences, which does not necessarily exclude EI. As a matter of fact, EI possesses a significant number of the properties that he lists in the 2007 paper, namely nondisplaceability, perspective dependence, descriptive ineffability and immediacy.

EI can only tell us something about the utterance situation itself. Consequently, the world variable *w* that *Exp* takes always represents the actual world. Note that a speaker cannot utter a *wh*-exclamative to show his/her emotional state of mind caused by Bill's tallness when s/he does not feel this way anymore. Even if the set of propositions in π refer to the past, as in *How beautiful Lola was when she was young!*, the speaker is still emotional about the degree of beauty of Lola in the past.

EI is also speaker-oriented (the individual who judges the expectedness of the propositions is always the speaker). We can easily imagine that the speaker may not utter a *wh*-exclamative if s/he means to say that another discourse participant is surprised at how tall Bill is. That is, we can utter a declarative like *it surprises Mary how tall Bill is*, but this could never correspond to *How tall Bill is!*

Furthermore, the speaker might find it difficult to explain what s/he meant when s/he used EI. S/he is obviously conveying an emotion that derives from unexpectedness and that may result in surprise or even joy, rage, admiration, etc., but this meaning is not as easily described as the at-issue meaning that lexical items have.

Finally, EI involves immediacy, because the act of using EI is sufficient for conveying its content, it is an emotive performance. Consider for example the dialog below:

- (27) a. A: How tall Bill is!
b. B1: # That's not true, you are not emotional.
c. B2: Come on, he's not that tall.

Interestingly, (27b) is impossible, because the speaker's emotional state cannot be denied, but a sentence like (27c) is acceptable and felicitous in this dialog, because what is being denied is not the speaker's attitude, but rather the sentence that one can infer when interpreting a *wh*-exclamative, i.e., that Bill is very tall. We cannot reply by denying that the speaker believes it, but we can deny the believed content. Therefore, it does not make sense to establish that EI ($Q_{\langle\langle s,t \rangle, t \rangle}$) is true if the conditions above hold or false otherwise.

To wrap up, the double-dimension semantics that I have proposed to represent *wh*-exclamatives is as follows:

- (28) a. CI tier: $EI(Q_{\langle\langle s,t \rangle, t \rangle})$
 b. assertion tier: $Q_{\langle\langle s,t \rangle, t \rangle}$

5.2 Discourse repercussions

In the previous subsection I have mentioned some of the properties that are claimed to hold for expressives like the epithet *damn*, but I have not said anything about independence and repeatability. Independence is not applicable here, because it has become obvious throughout this paper that if we remove EI from the equation, then the sentence cannot perform a meaningful contribution. However, EI may accompany a declarative clause and, then, we can remove it without affecting the truth-conditional meaning conveyed by the declarative. On the other hand, given that EI has scope over the whole sentence, it cannot be repeated within the very sentence. In any case, if we utter more than one *wh*-exclamative, the effect is that of strengthening the speaker's expression of his/her emotional state, it does not trigger redundancy.

It becomes clear that EI is different from *damn* in that the former is a speech act operator and not a lexical item that can occur within a sentence. I would like to explore now how such a speaker judgment (also known as *an ancillary commitment* in Bonami & Godard (2008)) updates the common ground.

In their paper, Bonami & Godard are concerned with evaluative adverbs like *malheureusement* ('unfortunately') in sentences like *Paul a malheureusement perdu l'élection* ('Paul unfortunately lost the election'). They argue that these adverbs cannot be challenged by other discourse participants, at least by ordinary means, which is reminiscent of the behavior of EI (cf. the dialog in (27)).

- (29) From Bonami & Godard (2008:285)
- a. A: Paul a malheureusement perdu l'élection.
'Paul unfortunately lost the election.'
 - b. B1: # C'est faux, je trouve que c'est une très bonne nouvelle.
'That's not true. I think it is very good news.'
 - c. B2: C'est vrai, mais moi, je trouve que c'est une très bonne nouvelle!
'Yes, but I personally think it is great news!'

Note that (27a) could be denied likewise:

- (30) Okay, he's tall, but I wouldn't be so excited about it.

Bonami & Godard (2008) present an analysis based on a dialog gameboard, where we can see how assertions interact with ancillary commitments. The matrices below formalize the moment when the speaker introduces p in the common ground (CMT stands for *commitment set*, CG for *common ground* and QUD for *question under discussion*).

$$(31) \left[\text{CMT} \quad \boxed{C} \text{CG} \quad \boxed{G} \text{QUD} \quad \boxed{Q} \right] \rightsquigarrow \left[\text{CMT} \quad \{p\} \cup \boxed{C} \text{CG} \quad \boxed{G} \text{QUD} \quad \langle p? \rangle \oplus \boxed{Q} \right]$$

When the speaker utters p , p is a speaker commitment along with the rest of the context and, crucially, $p?$ becomes a question under discussion as long as p has not been accepted by the rest of the discourse participants. When this happens, then p is erased from the question under discussion and becomes part of the common ground (and thus, of the rest of the participants' commitment set). In contrast, when the sentence we utter contains an evaluative like *malheureusement*, there is a remarkable difference in the matrices, namely the speaker includes both p and $\mathbf{eval}(p)$ in his/her commitment set, but $\mathbf{eval}(p)$ is never considered part of the question under discussion. Instead, it becomes part of the addressee's commitment set directly.

Let us propose a representation for $\text{EI}(Q^*)$ along the same lines (where I add $*$ to Q not to mistake it with the value of QUD):

$$(32) \left[\text{CMT} \quad \boxed{C} \text{CG} \quad \boxed{G} \text{QUD} \quad \boxed{Q} \right] \rightsquigarrow \left[\text{CMT} \quad \text{EI}(Q^*) \cup \boxed{C} \text{CG} \quad \boxed{G} \text{QUD} \quad \boxed{Q} \right]$$

In (32) we see that the speaker considers $\text{EI}(Q^*)$ as part of his/her commitment set, but s/he does not consider it within the question under discussion. That is why EI cannot be rejected by ordinary means. However, in contrast with $\mathbf{eval}(p)$, *wh*-exclamatives do not involve an independent assertion, because they are only meaningful contributions inasmuch they contain EI. That is why the question under discussion is not affected by the speaker uttering a *wh*-exclamative. For the sake of brevity, I am also disregarding the presuppositions triggered by *wh*-exclamatives, which should be added as the value of CG (i.e., as information that should be accommodated by the addressee). This includes the speaker's consideration of a set of alternatives or the speaker's knowledge of the strongest proposition in π that is true. I leave this issue for future research, but it is nonetheless clear that asserting p and uttering a *wh*-exclamative involves different gameboards in significant respects.

To wrap up, why can't an ancillary commitment answer a question? We have seen that a *wh*-exclamative cannot answer a question about the degree of a property that holds of an individual, because the semantics of the *wh*-clause only generates a set of alternatives. As for the expressive content is concerned, the operations at the CI tier are ancillary commitments and, as such, they do not update the common ground like assertions do. Hence, it follows that *wh*-exclamatives not only cannot answer a question about a degree, but also about the speaker's emotional state of mind. Let us see this with an example:

- (33) A: How do you feel about Bill?
- a. B1: I'm amazed at his degree of tallness.
 - b. B2: # How tall he is!
 - c. B3: # Wow!

d. B4: # (speaker smiling)

Even though EI conveys the speaker's surprise because Bill is unexpectedly tall, only B1 (i.e., a declarative clause) makes a proper answer to the question in A. I consider answers B2 through B4 to be equally odd since, although the addressee may infer the speaker's state of mind, the form of the utterance is not of the proper kind, that is, it is not an assertion *p*.⁸⁹ In other words, the fact that EI cannot be challenged by the rest of the discourse participants rules out the possibility that EI answers a question.

6 Concluding remarks

In this paper I have proposed that *wh*-exclamatives are *wh*-clauses which are uttered by knowledgeable speakers and which are able to satisfy the monotonicity requirement of EI. Also, I have argued that *wh*-clauses do not have the proper semantic type to be able to update the common ground as an assertion, and the meaning derived from EI is not suitable, either, because it represents an ancillary commitment.

This approach is a simple alternative that makes use of the interesting insights in the previous literature and which makes the right predictions about the data I have considered. Of course, many questions remain unanswered. I would like to mention two.

First, studying EI from the point of view of the interface between phonology and semantics would shed some light on the analysis of *wh*-exclamatives as well as on the analysis of declarative clauses that (apparently) involve the same intonation (e.g., *Bill is here!*). It would be very enlightening to establish a parallelism between predicates like *it's amazing* and EI and explore to what extent they impose different restrictions on the arguments they may take. Also, it would be interesting to study whether monotonicity is respected when instead of a set of propositions we have a single proposition (as is the case with declarative clauses).

Second, we could attempt to extend the hypothesis defended in this paper to other kinds of exclamative constructions. It would be particularly interesting to look at the variety of *wh*-constructions that are not used to ask questions, but which do not comply with the restrictions proposed here (e.g., *wh*-clauses in Romance that involve expletive negation). Hence we would be ready to propose a fine-grained list of basic ingredients that *wh*-exclamatives have, and to determine whether there are different kinds of *wh*-exclamatives and in what way they are different.

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⁸There seem to be some cross-linguistic differences about the acceptability of B3 and B4, which deserve additional research.

⁹The ability of *what a*-exclamatives to answer a question seems to be less restricted than that of *how*-exclamatives. This interesting piece of data should be taken into account in future research.

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