

Though exclamatives are not extremely amazing...  
...how amazing they are!\*

Elena Castroviejo Miró  
elena.castroviejo@ub.edu

September 23, 2006

- **Goals of the talk:** Propose a new analysis of exclamatives based on the data from Catalan and discuss several aspects of previous proposals.

## Outline

Main claims (section 1)
Data (section 2)
Proposal (section 3)
Comparison with previous proposals (section 4)
Conclusions (section 5)

### 1 Main claims

- Exclamatives are a special kind of degree construction and, as such, they should be approached like a comparative or a result clause construction.
- They include the degree operator *tan* ('so'), which establishes an equative relation between a reference degree ( $d_R$ ) and a standard degree ( $d_S$ ), which is always high.
- They are special because they involve *wh*-movement, which has an effect on the speaker's contribution to discourse.
- Their denotation does not derive from the denotation of questions.
- They denote facts, i.e., their descriptive content is not given a truth value.

---

\*I'm very grateful to Louise McNally and Xavier Villalba for commenting on my ideas and for helping me improve them. The remaining errors are all mine.

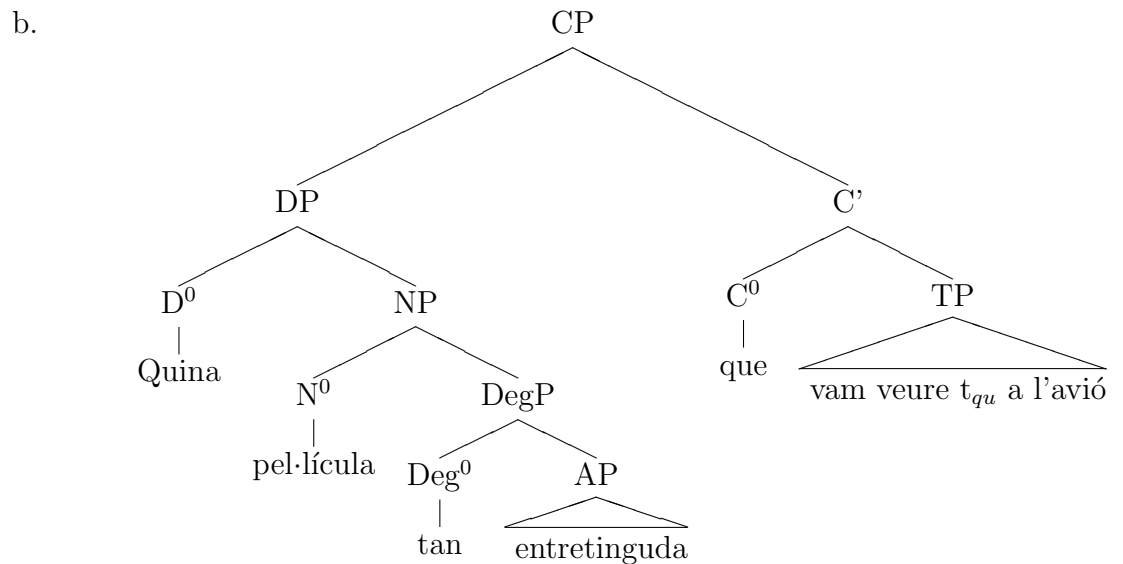
- (1) a. Que alt que és en Pau!  
 how tall that is the Paul  
 ‘How tall Pau is!’  
 b.  $T(\text{Que alt que és en Pau!}) = \exists d[\text{tall}(p) \succeq d]$   
 Where  $d$  is high enough to provoke an attitude in the speaker.

- Their discourse contribution: The speaker holds an attitude towards  $\wedge[\text{tall}(p) \succeq d]$ .

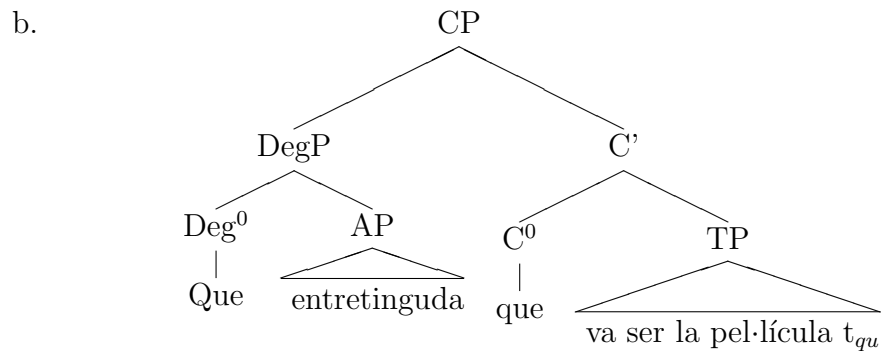
## 2 Data

- The exclamatives I study

- (2) a. Quina pel·lícula tan entretinguda que vam veure a l'avió  
 what movie so entertaining that AUX.we to.see at the plane  
 ‘What an entertaining movie we saw on the plane!’



- (3) a. Que entretinguda que va ser la pel·lícula!  
 how entertaining that AUX.it to.be the movie  
 ‘How entertaining the movie was!’



- Review of the relevant syntactic properties
  - In both cases there is a degree phrase that is located within CP, though in (2) the entire DP has moved, and in (3), only DegP has moved.
  - The degree operator in (2) is *tan* ('so') and in (3) it is *que* ('how'); they differ in that the latter contains a [+wh] feature.
  - Although *que* is translated as *how*, this *wh*-word cannot introduce a question. Interrogative *how* is *com*.
  - Exclamatives exhibit subject-verb inversion like interrogatives, but the former include the complementizer *que* ('that'), which does not occur in the latter.
- Puzzles that have been highlighted in the literature (Elliott, 1974; Grimshaw, 1979; Zanuttini and Portner, 2003)
  - Exclamatives can only embed in factive predicates.
    - (4) a. It's amazing how very tall Pau is.
    - b. I know how very tall Pau is
    - c. \*I wonder how very tall Pau is
    - d. \*I don't know how very tall Pau is
    - e. I didn't know how very tall Pau was
  - Exclamatives can only be modified by extreme-degree denoting adverbs.
    - (5) a. It's amazing how very/unbelievably/extremely long he can stay under water
    - b. \*It's amazing how slightly/fairly/reasonably long he can stay under water
  - Exclamatives cannot be used as questions or answers.
    - (6) a. A: How tall Pau is! B: # 2.10 meters
    - b. A: How tall is Pau? B1: # How tall he is! B2: He's very tall
- Crucial difference between English and Catalan: Exclamatives in Catalan do not easily embed in factive predicates.
  - (7) a. ??Em sorprèn que alt que és en Pau  
      to.me surprises how tall that is the Paul  
      'It surprises me how tall Pau is.'
  - b. \*Ja sé quin llibre tan bo que t'has llegit  
      already know.I what book so good that to.you AUX.you read  
      'I know what a good book you read.'

### 3 Proposal

#### 3.1 Exclamatives as a degree construction

- Exclamatives contain an overt degree word: *Tan* ('so').
  - Only gradable predicates can be modified by the degree word.
 

(8) \*Quin triangle tan equilàter!  
'What an equilateral triangle!'
  - I interpret *que* ('so') in (3) as *tan*'s *wh*-counterpart (i.e., a degree word with a [+wh] feature).
  - Interpretation:
 

(9)  $[[\text{TAN}(d_R)(d_S)]] = 1$  iff  $d_R \succeq d_S$   
[Adapted from the definition of AS in Kennedy (1999)]

(10)  $T(\text{tan}) = T(\text{que}) = \lambda G_{\langle e, d \rangle} \lambda x. \exists d [\text{TAN}(G(x))(d)]$
  - *Tan* is a degree morpheme: It takes as input an adjective construed as a measure function (i.e., of type  $\langle e, d \rangle$ ) and it returns a property of individuals (i.e., of type  $\langle e, t \rangle$ ). This property is described as a relation between two degrees:  $d_R$  and  $d_S$ .
- The degree operator that occurs in exclamatives also occurs in other degree constructions.
 

(11) a. En Pau és **tan** alt com en Kareem  
the Paul is as tall as the Kareem  
'Pau is as tall as Kareem.'

b. En Pau és **tan** alt que arriba al sostre  
the Paul is so tall that arrives at the ceiling  
'Pau is so tall that he reaches the ceiling.'
- Exclamatives denote high degree (but not extreme degree).
  - Crucially, *as-tan* (cf. (11a)) establishes an equative relation between two degrees and it does not matter what value  $d_S$  has. In contrast, *so-tan* (cf. (11b)) introduces a restriction on the value of  $d_S$ , namely, that it must be high enough to provoke an attitude in the speaker:
 

(12) # En Joan és **tan** gran que es pot vestir ell sol  
'John is such a grownup that he can get dressed on his own.'  
'(lit.) John is so old that he can get dressed on his own.'

- (13) a. L'Albert és **tan** alt com en Robert (e.g., 1.50 m)  
'Albert is as tall as Robert.'  
b. En Joan és **prou** gran per vestir-se sol (e.g., 10 years old)  
'John is old enough to get dressed on his own.'

(12) shows that the degree word introduces a standard degree that has to be high in order to make the sentence acceptable, which is not a requirement in (13), where the degree words *as* and *enough* involve the same equative relation between  $d_R$  and  $d_S$ , but  $d_S$  is not necessarily high.

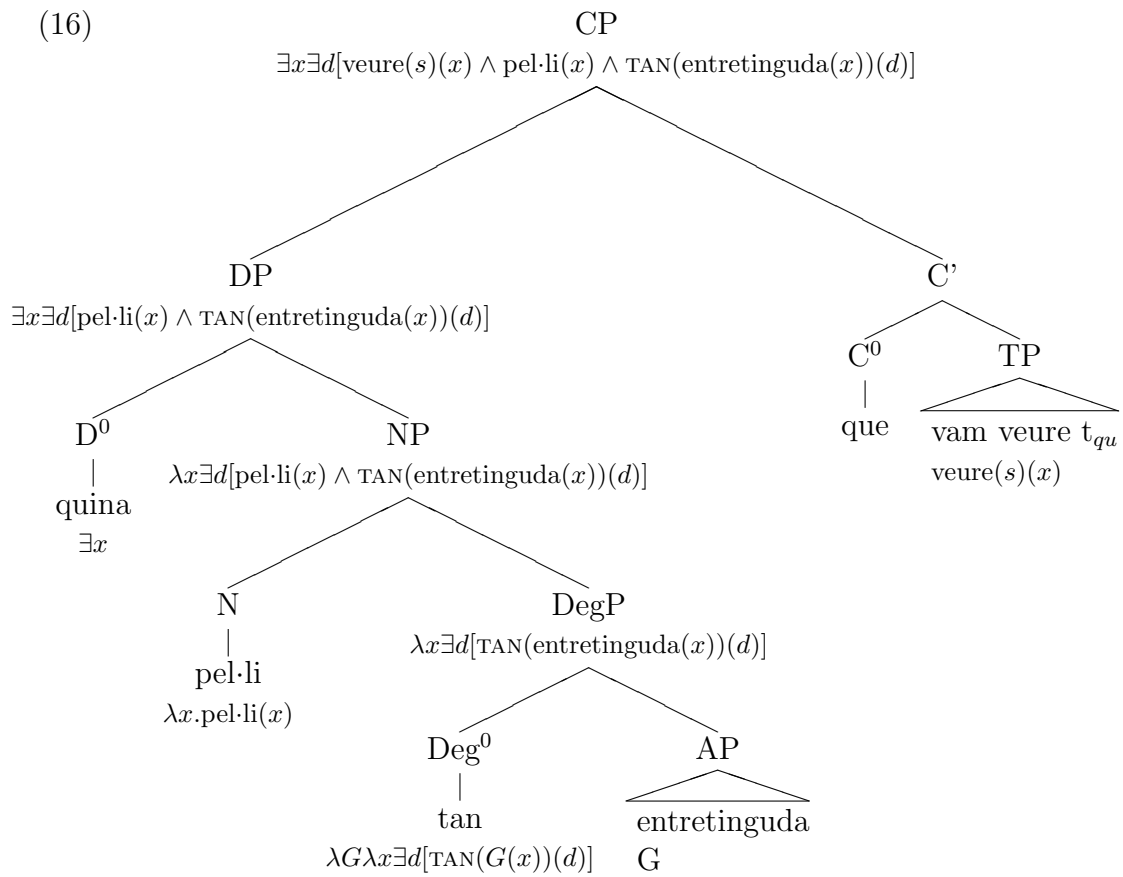
- The *tan* that occurs in exclamatives is the one translated as *so* in (11b). That is, one in which  $d_S$  has to be high (in particular, high enough to evoke an attitude to the speaker).
- Consequences:
  - Only manner adverbs that denote high degree can modify the gradable adjective in exclamatives (cf. (5a)).
  - In exclamatives that modify closed scale adjectives, the degree indicated is high with respect to the speaker's expectations, but not necessarily extreme in absolute terms.

- (14) a. Que ple que està l'estadi!  
how full that is the stadium  
'How full the stadium is!' → 20% full, 100% full or 120% full  
depending on where the speaker's expectations lie.  
b. L'estadi està ple  
'The stadium is full.' → 100% full

## 3.2 Compositional semantics

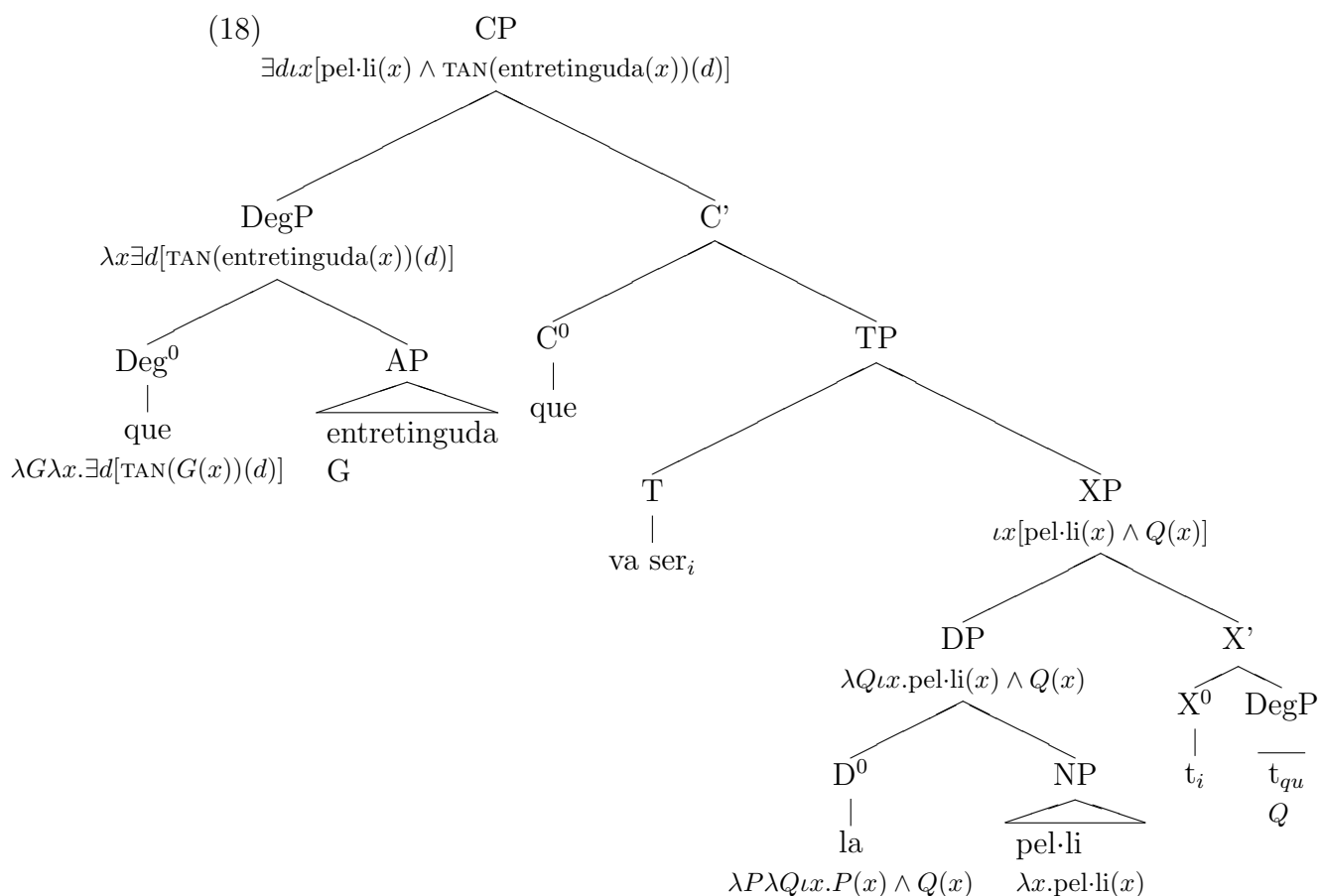
- The semantic composition of an exclamative would lead us to obtain a truth value:

- (15) a. Quina pel·lícula tan entretinguda que vam veure a l'avió!  
'What an entertaining movie we saw on the plane!'  
b.  $\llbracket$ Quina pel·lícula tan entretinguda que vam veure a l'avió! $\rrbracket =$   
1 iff  $\exists x \exists d [\text{pel·lícula}(x) \wedge \text{veure}(s)(x) \wedge \text{TAN}(\text{entretinguda}(x))(d)]$ , where  $d$   
is high enough to provoke an attitude in the speaker.



- (17) a. Que entretinguda que va ser la pel·lícula!  
 'How entertaining the movie was!'

- b.  $\llbracket \text{Que entretinguda que va ser la pel}\cdot\text{l}\acute{\text{i}}\text{cula!} \rrbracket =$   
 1 iff  $\iota x \exists d [\text{pel}\cdot\text{li}(x) \wedge \text{TAN}(\text{entretinguda}(x))(d)]$  where  $d$  is high enough to  
 provoke an attitude in the speaker.



- However, the exclamatives' idiosyncratic discourse contribution suggests that they do not denote a truth value; rather, their propositional content is a fact (in the line of Ginzburg and Sag (2001)).

### 3.3 Exclamatives as facts

- What does a fact contribute to discourse?
  - In an exclamative, the speaker is committed to its content and the context is biased (Gunlogson, 2001), just as in a declarative.
    - To **commit** the propositional content of an utterance to a discourse participant (either the speaker or the addressee) is to confer this belief to this participant.
    - A context is **biased** when for a public belief (say  $q$ ) to become a mutual belief, it only takes ratification, but it is impossible for  $\neg q$  to become a mutual belief without revision.
  - However, the distribution of exclamatives is more restricted: They cannot be employed in a situation in which the addressee publicly commits the

speaker to a certain propositional content (as in questions), because the utterer of an exclamative takes its propositional content for granted.

- What the speaker wants to contribute to discourse is his/her attitude (as in Katz (2005)) towards the fact that an individual  $x$  is at least as ADJ as a high  $d_S$ .

– Aren't facts supposed to embed in factive predicates?

- In Catalan factivity is not enough. Not only must the verbal form be able to embed a *wh*-clause, but also to evoke the speaker's attitude: Perception verbs in the imperative, in a yes/no question or in the future tense.

- (19)
- a. Mira quin llibre tan bo que m'he llegit!  
'Look what a good book I've read!'
  - b. Ja veuràs quin llibre tan bo que m'he llegit  
'You'll see what a good book I've read.'
  - c. Has vist quin llibre tan bo que m'he llegit?  
'Have you seen what a good book I've read?'

- The rest of contexts are deviant

- Emotive factives do not embed *wh*-clauses in Catalan → they cannot embed exclamatives (cf. (7a)).

In these contexts, though, a concealed proposition, represented by a DP or a free relative, is available.

- (20)
- a. Em sorprèn *lu* alt que és en Pau  
to.me surprises the tall that is the Pau  
'It surprises me how tall Pau is.'
  - b. Em sorprèn el llibre que t'has llegit  
to me surprises the book that to you.AUX read  
'It surprises me the book you have read.'
  - c. Em sorprèn el que has fet  
to me surprises the that AUX.you done  
'It surprises me what you have done.'

- Cognitive factives do not encode the speaker's emotional attitude towards a degree → they cannot embed exclamatives in Catalan (cf. (7b)).

- (21)
- a. Em sorprèn que t'hagis llegit un llibre tan bo  
'It surprises me that you have read such a good book.'
  - b. \*Sé que t'has llegit un llibre tan bo  
'I know that you have read such a good book.'

- English behaves differently. The occurrence of *how very* and *what a* requires that the verb select a *wh*-clause and that the speaker know the value of the *wh*-variable. Consequences:

- They are introduced by factive verbs, but question-embedding predicates are unable to do so (cf. (4)).
- When the speaker's referent is the subject, it cannot be negated in the present tense (cf. (5b)) – the other persons and tenses are acceptable because there is an inference according to which the speaker knows the value of the *wh*-variable at the present moment (cf. (4e)).
- They cannot be used as questions (cf. (6a)).

## 4 Comparison with previous analyses

- Widening and factivity (Zanuttini and Portner, 2003)

- Widening is the formalization of a scalar implicature according to which the proposition that is expressed lies at the extreme end of a contextually given scale (cf. (5)).
- Also, it codifies the sentential force of exclamatives.
- Exclamatives, like interrogatives, denote a set of propositions that are the possible/true answers to the question represented by the interrogative clause.

- (22) a. Che roba che l mangia! (Paduan)  
what stuff that he eats  
'The things he eats!' (Zanuttini and Portner, 2003, 49)
- b.  $\llbracket \text{Che roba che l mangia!} \rrbracket_w = \{p: p \text{ is true and } \exists a [p = \text{'a is a pepper and he eats a'}]\} = \{\text{eats}(\text{he}, \text{poblanos}), \text{eats}(\text{he}, \text{serranos}), \text{eats}(\text{he}, \text{jalapeños})\}$

- (23)  $\llbracket \text{What does John eat?} \rrbracket_w = \{\text{eats}(\text{John}, \text{poblanos}), \text{eats}(\text{John}, \text{serranos}), \text{eats}(\text{John}, \text{jalapeños})\}$

- But exclamatives contain a factive morpheme (FAC) and its combination with the *wh*-operator triggers the emergence of a pragmatic inference called *widening*, by which the quantificational domain that the *wh*-operator establishes (the standard set of true propositions) is expanded to a wider domain (one that includes propositions that are not considered in the set of standard alternatives).

- (24) a.  $R_{\text{widening}}$  refers to an element in the syntax to which the pragmatic operation of widening will apply.
- b.  $R_{\text{widening}}$  has the semantics of a quantificational operator.
- c. WIDENING: For any clause  $S$  containing  $R_{\text{widening}}$ , widen the initial domain of quantification for  $R_{\text{widening}}$ ,  $D1$ , to a new domain,  $D2$ , such that
- i.  $\llbracket S \rrbracket_{W, D2, <} - \llbracket S \rrbracket_{W, D1, <} \neq 0$  and

- ii.  $\forall x \forall y [(x \in D1 \ \& \ y \in (D2 - D1)) \rightarrow x \prec y]$
- (25) a.  $\llbracket S \rrbracket_{D_1} = \{\text{eats}(\text{he}, \text{poblanos}), \text{eats}(\text{he}, \text{serranos}), \text{eats}(\text{he}, \text{jalapeños})\}$   
 b.  $\llbracket S \rrbracket_{D_2} = \{\text{eats}(\text{he}, \text{poblanos}), \text{eats}(\text{he}, \text{serranos}), \text{eats}(\text{he}, \text{jalapeños}), \text{eats}(\text{he}, \text{güeros}), \text{eats}(\text{he}, \text{habaneros})\}$
- An exclamatory operator and the basic denotation of interrogatives as in Groenendijk and Stokhof (1984) (Gutiérrez-Rexach, 1996):
    - EXC is an operator over propositions:
 

(26) Let  $a$  be the speaker,  $w$  a world (typically the actual world),  $p$  a proposition, and  $P \in \text{EMOT}$  (the set of emotive properties). Then,  
 $\text{EXC} =_{df} \lambda a_i \lambda w_s \lambda p_{\langle s, t \rangle} \exists P_{\langle s, \langle \langle s, t \rangle, \langle e, t \rangle \rangle \rangle} [P(w)(p)(a)]$
    - This is the interpretation of a degree interrogative in a Groenendijk and Stokhof (1984) fashion:
 

(27) a. How tall is John?  
 b.  $\lambda w' [\iota d [\text{tall}(w)(j, d)] = \iota d [\text{tall}(w')(j, d)]]$
    - EXC is applied to the proposition that derives from the interpretation of the exclamative's interrogative counterpart, to yield the interpretation of the exclamative.
 

(28) a. How tall John is!  
 b.  $\text{EXC}(a)(w)(\lambda w' [\iota d [\text{tall}(w)(j, d)] = \iota d [\text{tall}(w')(j, d)]])$   
 $\text{iff } \exists P \in \text{EMOT} [P(w)(\lambda w' [\iota d [\text{tall}(w)(j, d)] = \iota d [\text{tall}(w')(j, d)]])(a)]$
    - There is an additional part of the meaning of an exclamative, namely, that John's tallness is greater than any other degree in the scale of tallness, which is translated as an ordering relation between degrees according to the speaker's expectations.
 

(29)  $\forall d' \in D_{\text{tall}} \forall w w' [d' \prec_a d \wedge \text{tall}(w)(d') \rightarrow \neg \text{EXC}(a)(w)(\lambda w'' [\iota d' [\text{tall}(w')(j, d')] = \iota d' [\text{tall}(w'')(j, d')]])]$
  - Weak points of the previous analyses
    - There is an identification between *wh*-constructions and questions, which leads the literature to treat exclamatives as questions. Free relatives are also *wh*-constructions and they are not analyzed as denoting a set of possible/true answers.
    - Typically, exclamatives cannot be answered (cf. (6b)), so accepting that their basic denotation is the same as that of a question triggers the need to stipulate an additional ingredient that blocks this possibility (FAC or EXC).

- There are *wh*-words that exclusively introduce exclamatives, so it is hard to believe that they initially introduce questions.
- The conditions that trigger the emergence of widening are also met in embedded contexts, which contradicts the claim that embedded clauses lose their force. This suggests that widening might not be a proper sentential force.
- An alternative
  - High degree does not derive from the expansion of a quantificational domain associated to a *wh*-word, but from the denotation of a degree word that has the same meaning in other degree constructions.
  - Attitude towards degrees encodes unexpectedness and other emotions that trigger the utterance of an exclamative.
  - Since the degree that is reached is at least as high as the minimal level of ADJ-ness that provokes an attitude in the speaker, there is no need for an additional implicature that makes sure this is part of the meaning of an exclamative.
  - *Wh*-movement induces that exclamatives denote facts; that is, they do not assert their propositional content.
  - Facts do not assert their propositional content, but they have to make a contribution to discourse, too. What the speaker contributes to discourse is his/her attitude (cf. Saebø (2005)). This is why they are not proper answers (cf. (6b)).
  - As opposed to questions, in which the speaker asks about the value of the *wh*-variable, in an exclamative, the speaker knows this value. This makes it impossible for them to be suitable questions (cf. (6a)).
  - In an exclamative, the speaker shows an attitude towards the gradable property that  $x$  has. Attitudes are applied to propositions, not to degrees directly (Katz, 2005): In an exclamative, the attitude is held towards the fact that  $x$  is at least as ADJ as a high  $d_S$ .

(30) Example (2)  $\rightarrow$  the speaker shows an attitude towards  
 $\wedge$  [TAN(entretinguda( $x$ ))( $d$ )]

## 5 Conclusions

- It makes sense to approach exclamatives in Catalan from the point of view of degree constructions rather than from the point of view of questions.
- The semantics proposed for exclamatives in Catalan states that exclamatives are unembeddable in factive predicates, but free relatives are not. This suggests that embedded exclamatives introduced by *how* in English may be instances of free relatives.

- It would be interesting to study exclamatives crosslinguistically in order to establish what properties they share.
- Another interesting line of research would be to examine the different embedding restrictions across languages.
- Also, the semantic import of the *wh*-component could be discussed in order to find out whether a common semantics for all *wh*-constructions is in order.

## References

- Elliott, D.E. 1974. Toward a grammar of exclamatives. *Foundations of Language* 11:231–246.
- Ginzburg, J., and I. Sag. 2001. *Interrogative investigations: The form, meaning and use of English interrogatives*. Stanford, CA: CSLI.
- Grimshaw, J. 1979. Complement selection and the lexicon. *Linguistic Inquiry* 2:279–326.
- Groenendijk, J., and M. Stokhof. 1984. Studies on the semantics of questions and the pragmatics of answers. Doctoral Dissertation, University of Amsterdam.
- Gunlogson, C. 2001. True to Form: Rising and Falling Declaratives as Questions in English. Doctoral Dissertation, University of California Santa Cruz.
- Gutiérrez-Rexach, J. 1996. The semantics of exclamatives. In *Syntax at sunset. UCLA Working Papers in Linguistics*, ed. E. Garret and F. Lee. UCLA.
- Katz, G. 2005. Attitudes toward degrees. In *Proceedings of SuB9*, ed. C. Bary E. Maier and J. Huitink.
- Kennedy, C. 1999. *Projecting the adjective. the syntax and semantics of gradability and comparison*. New York: Garland.
- Ono, H. 2004. Why doesn't English allow multiple exclamatives? Paper presented at the GLOW Workshop, Thessaloniki.
- Saebø, K.J. 2005. The logical basis of exclamatives. Paper presented at the JSM05, Paris, March 17-18 2005.
- Zanuttini, R., and P. Portner. 2003. Exclamative clauses: at the syntax-semantics interface. *Language* 39–81.
- Elena Castroviejo Miró  
elena.castroviejo@ub.edu  
[http://www.ub.edu/ling/pinv/elena\\_castroviejo.html](http://www.ub.edu/ling/pinv/elena_castroviejo.html)