

*How relatively amazing exclamatives are!
A proposal of analysis based on the semantics of degree

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Outline of the talk

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Goals of my prospective dissertation

1. Establish the essential ingredients of exclamatives; a list of properties that can differentiate exclamatives from non-neutral interrogatives (particularly those that are not used as questions).
2. Propose an alternative analysis for exclamatives that does not involve as many stipulations as the ones in previous accounts.
3. Provide a descriptively-adequate analysis for exclamatives in Catalan that can be further applied to exclamatives in other languages.

Hypothesis

Exclamatives are a sort of degree construction that requires that some minimal degree be exceeded. Particularly, the degree applied to an individual has to be such that the speaker has an attitude towards it.
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1 Main claims

- The most useful way to approach exclamatives is from the viewpoint of degree constructions (not from the viewpoint of the semantics of questions, cf. Zanuttini and Portner (2003); Gutiérrez-Rexach (1996)).
- Exclamatives include a degree operator that establishes a relation between the actual degree and a minimal value. It is the \succ relation.
- Exclamatives in Catalan are related to result constructions (1a) and paradigmatic comparatives (1b).

- (1) a. La Maria és tan llesta que ha aconseguit feina abans d'acabar la
the Mary is so smart that AUX got job before of finishing the
carrera.
studies
'Mary is so smart that she got a job before getting her degree.'
- b. Això és més vell que l'anar a peu.
this is more old that the to-go on foot
'(lit.) This is older than going on foot.'

- *Wh*-movement or rising intonation are responsible for the lack of result *that*-clause.
- The lack of *that*-clause involves context in determining the minimal value that is exceeded.
- The exclamative flavor is obtained in the following way: The minimal value that is exceeded is the degree that it takes for the speaker to have an attitude towards this degree.
- *Wh*-exclamatives and rising-exclamatives do not seem to have the same pragmatic status.

2 The semantics of degree

- Adjectives and modifiers
 - Following Kennedy and McNally (2005, to appear) I will assume that gradable adjectives (G) are measure functions that take an individual as input and give out a degree: $\langle e, d \rangle$.
 - Gs merge with a measure phrase or the null morpheme *pos* (as in von Stechow (1984)) of type $\langle \langle e, d \rangle, \langle e, t \rangle \rangle$ to form a predicate of individuals $\langle e, t \rangle$.

(2) John is 5-feet tall

(3) John is *pos* tall

 - Modifiers such as *very* are called *intensifiers*. They take as input a G that has already merged with *pos* and give a predicate of individuals in return; they are of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$.
- Open and closed scales
 - Adjectives with a standard that is not dependent on the context
 1. Minimum standard: awake, visible, open.
 2. Maximum standard: full, flat, closed, straight.
 - Adjectives with a context-dependent standard: tall, interesting, wide.

3 Proposal

3.1 What is an exclamative?

- An exclamative is a clause that contains a degree operator and a scalar predicate (i.e., a predicate with a degree argument to be bound). The nature of the degree operator involves the existence of some minimal level that is exceeded. This minimal level is determined by what degree would make the speaker have an attitude towards this degree applied to a gradable adjective and an individual.
- A *wh*-exclamative (my object of study) is a *wh*-clause that contains (1) a degree operator that is located in the left periphery and (2) a scalar predicate.

- Exclamatives in Catalan:

- (4) a. Quina paciència!
what patience
'(lit.) What a patience!'
- b. Quina paciència que té la teva tieta!
what patience that has the your aunt
'(lit.) What a patience that your aunt has!'
- c. Quina paciència tan/més gran que té la teva tieta!
what patience so/more big that has the your aunt
'(lit.) What a big patience that your aunt has!'
- (5) a. Que afortunat!
how lucky
'How lucky!'
- b. Que afortunat que és el teu oncle d'Amèrica!
how lucky that is the your uncle from America
'How lucky your uncle from America is!'
- (6) El teu oncle d'Amèrica és tan/més afortunat!
the your uncle from America is so/more lucky
'Your uncle from America is so lucky!'
- (7) *Que presidencials que van ser les eleccions!
how presidential that AUX to be the election
'How presidential the election was!'

3.2 The denotation of an exclamative

- Exclamatives denote truth values. They are of type $\langle t \rangle$.
- Their truth value depends on whether or not the degree to which a certain property holds of an individual provokes an attitude to the speaker.

- (8) $\llbracket \text{Que alt que és en Joan!} \rrbracket = 1$ iff the degree to which John is tall exceeds the minimal degree such that the speaker has an attitude if the degree of tallness of this individual exceeds this minimal level.

- The degree operator establishes the \succ relation between two degrees (that is what *més* and *tan* have in common).

- (9) $\llbracket \text{tan/més/que} \rrbracket = \lambda d \in D_d \lambda G \in D_{\langle e, d \rangle} \lambda x \in D_e. G(e) \succ d$
- a. If d is an explicit argument, then we obtain a result clause or a paradigmatic comparative. Otherwise we obtain an exclamative.
- b. d in an exclamative is defined as the minimal degree such that if the result of merging $G_{\langle e, d \rangle}$ with an individual exceeds this degree, then the speaker has an attitude.

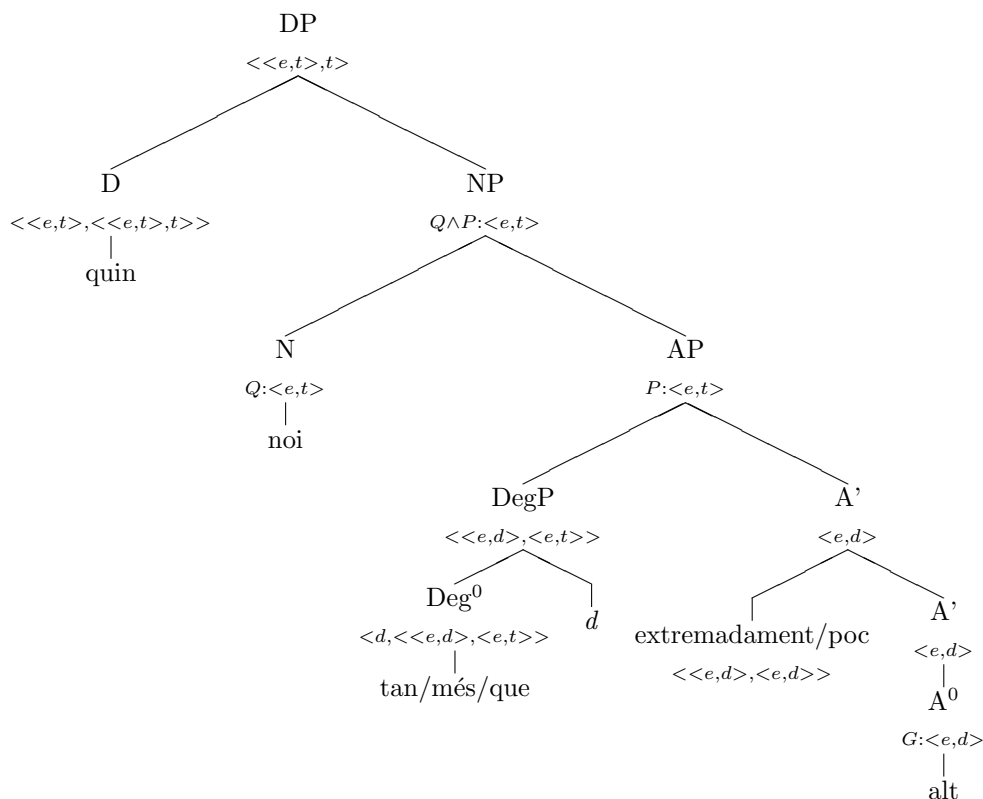
- Evidence in favor of this: Cases in which *tan* appears but it cannot co-occur with a *that*-clause. Then, the relation that it establishes is = (as in an equative).

- (10) a. En Joan no és tan alt.
The John NEG is so tall
'John is not so tall.'

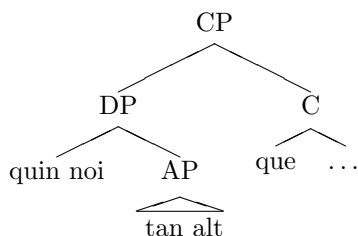
- b. *En Joan no és tan alt!
The John NEG is so tall
'John is not so tall!'
- c. En Joan no és tan alt com en Pere.
The John NEG is as tall as the Peter
'John is not as tall as Peter.'
- d. *En Joan no és tan alt que arriba al sostre.
The John NEG is so tall that arrives at the ceiling
'John is not so tall that he reaches the ceiling.'
- (11) a. Sento que t'hagi tocat una feina tan avorrida.
regret.I that you (DAT) AUX got a job so boring
'I'm sorry that you got such a boring job'
- b. *T'ha tocat una feina tan avorrida.
you (DAT) AUX got a job so boring
'You got such a boring job'
- c. T'ha tocat una feina tan avorrida!
you (DAT) AUX got a job so boring
'You hot such a boring job!'
- (12) Gràcies per aquest regal tan maco.
thanks for this present so nice
'Thanks for such a nice present.'
- (13) a. Tens sort de tenir un cap tan comprensiu.
have.you luck of to have a boss so understanding
'You are lucky to have such an understanding boss.'
- b. Tens sort que la Maria hagi marxat tan lluny.
have.you luck that the Mary AUX left so far
'You are lucky that Mary left so far away.'
- (14) Has vist mai un noi tan alt?
AUX.you seen ever a boy so tall
'Have you ever seen such a tall boy?'

3.3 Compositional analysis

(15)



(16)



3.4 The attitude component

- Some adverbs indicate that a propositional attitude holds with respect to a degree associated with a predicate. Katz (2004) calls them *attitude toward degree (henceforth ATD) modifiers*.
- One such adverb is *frustratingly* in (17). The sentence could be reformulated as: The degree to which Sarah was late was frustrating.

(17) Sarah was frustratingly late

- ATD modifiers show the monotonicity effect that arises in the examples in (18). Crucially, monotonicity is not part of the attitude predicates' (*surprising*) meaning, but the ATD modifiers' (*surprisingly*) meaning. Thus, their denotation requires a universal quantification over degrees (20).

(18) (from Katz (2004))

- Surprisingly, the pool is 60% full
 We thought it would be either totally full or empty

- b. It is surprising that the pool is 60% full
 We thought it would be either totally full or empty
- c. (At 60% full) The pool was surprisingly full
 ??We thought it would be either totally full or empty
- (19) Surprising(P) is true iff $\forall w \in W$ if P is true in w , then w is a surprising world.
- (20) $\llbracket \text{surprisingly} \rrbracket = \lambda P \lambda x. \exists d [P(x) = d \wedge \forall d' [d' R_p d \rightarrow \text{surprising}(\wedge [P(x) = d'])]]$
- Entailments associated with ATD modifiers:
 - Predicates with minimal standard values give rise to the entailment.

(21) The towel is surprisingly wet \rightarrow The towel is wet.
 - Maximal standards never give rise to the entailment.

(22) The towel is surprisingly dry $-/\rightarrow$ The towel is dry.
 - Contextual standards give rise to strong implicature.

(23) Steve is surprisingly tall $-implicates \rightarrow$ Steve is tall.
 - I will claim that an essential ingredient of exclamatives is that they denote an attitude towards a degree.
 - ATD encodes the attitude that underlies exclamatives.
 - Exclamatives show the same monotonicity effects as the constructions with ATD modifiers:

(24) a. It amazes me that John is 2 meters tall
 I thought it would be either 1,50 meters tall or 2,15 meters tall.

b. (John is 2 meters tall) How tall John is!
 #I thought it would be either 1,50 meters tall or 2,15 meters tall.
 - ATD modifiers pattern with exclamatives with respect to entailments.

(25) a. Que molla que està la tovallola!
 how wet that is the towel
 ‘How wet the towel is!’ \rightarrow The towel is wet.

b. Que seca que està la tovallola
 how dry that the towel is
 ‘How dry the towel is!’ $-/\rightarrow$ The towel is dry.

c. Que alt que és l’Esteve!
 how tall that is Steve
 ‘How tall Steve is!’ $-implicates \rightarrow$ Steve is tall.
 - We can get rid of extreme-degree accounts.
 - It has been traditionally assumed that exclamatives denote high degree, extreme degree, that they point at the extreme upper end of the scale, etc. Here is some evidence:

(26) 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.
- (27) a. How tall John is!–#though he’s not extremely tall.

b. John is quite tall—though he’s not extremely tall.

- As for (26) I think that it is pragmatically odd to have an attitude towards an ordinary degree.
- As for (27) I will argue that the problem with the sentence might be related with the fact that the speaker has an attitude and suddenly he changes into another one. It would be an okay sentence if the second part were uttered by another one in the conversation.

(28) A: How tall John is! B: But he’s not extremely tall. A: You may be right, but nevertheless it amazes me how tall he is.

- Examples with maximal standard adjectives show that precisely when the adjective is modified, the result is never the extreme end of the scale.

(29) Que ple que està l’estadi!
how full that is the stadium
‘How full the stadium is!’ → The stadium is 80% full, but it is not 100% full.

- In what way are exclamatives different from constructions with ATD modifiers? I believe that the degree operator in exclamatives impose certain restrictions to the appearance of the attitude. Specifically, the attitude is the *result* of the degree to which some property holds.

3.5 Justification of my approach: Exclamatives as a sort of degree construction

1. In Catalan, exclamatives contain an overt degree operator (or it can be traced by context). This suggests that this degree operator (and not only the *wh*-operator) has something to do with the exclamative meaning.
2. Structures with the degree operator *tan* or *més* in Catalan with a rising intonation seem to behave like *wh*-exclamatives in many respects, even though they do not exhibit *wh*-movement.
3. The same operators appear in result clauses and paradigmatic comparatives.
4. There is evidence against the claim that exclamatives have to be interpreted from the viewpoint of the semantics of questions.
 - (a) This would imply that languages that do not build exclamatives with elements that participate in interrogatives do not have exclamatives (as a matter of fact this is Zanuttini and Portner (2003)’s hypothesis: Only *wh*-exclamatives are exclamatives and this clause type is not universal).
 - (b) Opposite to questions, exclamatives cannot be answered. It seems odd to think of the denotation of an exclamative as a set of possible/true answers.
 - (c) I have argued that exclamatives denote truth values (whereas classical accounts of interrogatives assume that they denote a set).

4 Problems

4.1 How do we do without factivity?

- Elliott (1974) showed that exclamatives only could be embedded under factive predicates. According to Kiparsky and Kiparsky (1970) factivity is a concept applied to predicates that select for a clause that is presupposed to be true. It is the case of *it’s amazing*, *it’s*

fascinating, find out, know, realize. We can check that these clauses are presupposed by means of the P-family test:

- (30) a. I found out that she came home early. \rightarrow She came home early.
b. It is not the case that you found out that she came home early \rightarrow She came home early.
c. Did you find out that she came early? \rightarrow She came home early.
d. If you find out that she came home early, then you will be right. \rightarrow She came home early.

- The necessary combination of an exclamative with a factive predicate is clear in the following examples:

- (31) a. It's amazing/surprising/unbelievable how very smart you are
b. *I wonder how very smart you are

- Grimshaw (1979) assumed that exclamatives were inherently factive. By that she meant that matrix exclamatives presupposed their propositional content. For example:

- (32) How tall Bill is! \rightarrow Bill is tall

- Zanuttini and Portner (2003) also assume that exclamatives are factive. But they mean something else.

- What they mean by that is that there is something in the propositional content of exclamatives that is presupposed to be true.
- Specifically, they claim that the denotation of exclamatives is the same as that of interrogatives (a set of the true answers), but exclamatives have an additional property that is triggered by the conjunction of factivity and the semantics of questions: Widening.
- This means that a wider set is created from the standard one, that contains those individuals that would not be likely to appear in the set of standard elements. Furthermore, they are organized by the \succ relation.
- So, what is presupposed is the existence of the individuals contained in the widened domain and not in the standard domain. The same should read in the following formulas:

- (33) Widening: For some domain variable C , change the assignment function g to g' such that

1. g differs from g' only on what it assigns to C , and
2. $\llbracket S \rrbracket_{g'} - \llbracket S \rrbracket_g \neq \emptyset$.

(Zanuttini and Portner, 2005)

- (34) a. Let $R_{factivity}$ be the syntactic representation of factivity.
b. FACTIVITY: For any clause S marked by $R_{factivity}$, every $p \in (\llbracket S \rrbracket_{D2} - \llbracket S \rrbracket_{D1})$ is presupposed to be true.

- Going back to (32), according to Zanuttini and Portner (2003), two sets would be created.

- (35) a. $\text{Domain}_{standard} = \{1,75 \text{ m}, 1,80 \text{ m}, 1,85 \text{ m}, 1,90 \text{ m}, 1,95 \text{ m}\}$
b. $\text{Domain}_{widened} = \{1,75 \text{ m}, 1,80 \text{ m}, 1,85 \text{ m}, 1,90 \text{ m}, 1,95 \text{ m}, 2 \text{ m}, 2,05 \text{ m}, 2,10 \text{ m}, \dots 2,30 \text{ m}\}$

(36) $D_{widened} - D_{standard} \neq \emptyset$. Actually it is $\{2 \text{ m}, 2,05 \text{ m}, 2,10 \text{ m}, \dots 2,30 \text{ m}\}$, and these items are presupposed to be true under their account

- How am I supposed to account for the previous contrasts and the following puzzles without appealing to factivity?

(37) a. *I don't know how very smart you are
b. She doesn't know how very smart you are

(38) A: How tall is John? B1: Very tall B2: 2 meters B3: #How tall he is! B4: He's so tall that he touches the ceiling B5: He's so tall that it amazes me

4.2 How is the attitude component semantically represented?

- Do we have to assume that there is a null ATD modifier in every exclamative? But...
 - According to Katz (2004), ATD modifiers are of type $\langle \langle e, d \rangle, \langle e, t \rangle \rangle$. So they share type with measure phrases. However, exclamatives are not compatible with measure phrases (*How 2 meters tall this man is!).
 - Also, we have assumed that modal adverbs that modify the scalar predicate do not change its type (they are $\langle \langle e, d \rangle, \langle e, d \rangle \rangle$).
 - Does it make sense to postulate a modifier that is always null?
 - When exclamatives co-occur with ATD modifiers, then this case is comparable to that of a ATD modifier that can be itself modified, just like in the following examples:

(39) a. The pool was very surprisingly full.
b. Peter was more frustratingly late than Mary.

(40) The apartment was surprisingly uncomfortably small.

- So, how do we deal with the existence of sentences like the ones below? What do they tell us about the type of the ATD modifier?

(41) Que alt que és en Joan \rightarrow John is tall to a degree d such that $d \succ d'$ and d' is the minimal level such that if John is d' -tall then the speaker has an attitude.

(42) Que sorprenentment alt que és en Joan! \rightarrow John is surprisingly tall to a degree d such that $d \succ d'$ and d' is the minimal level such that if John is d' -surprisingly tall then the speaker has an attitude.

(43) Que extremadament alt que és en Joan! \rightarrow John is extremely tall to a degree d such that $d \succ d'$ and d' is the minimal level such that if John is d' -extremely tall then the speaker has an attitude.

4.3 Exclamations or assertions?

- I am assuming that exclamatives denote truth values like declaratives. But, interestingly, it is not clear whether they are assertions. As a matter of fact, they cannot be used as answers.

(44) a. A: Com és d'alt en Joan?
A: how is of tall the John
'How tall is John?'
b. B1: # Que alt que és!
B1: how tall that is
'How tall he is!'

- c. B2:# És tan/més alt!
B2: is so/more tall
'He's so tall!'

- Rising exclamatives can be used as answers if we ask the appropriate question, even though they are not maximally informative. But even then, *wh*-exclamatives cannot work as answers.

- (45) a. A: Què opines d'en Noam?
A: what think.you of the Noam
'What's your opinion of Noam?'
- b. B1: És tan intel·ligent!
B1: is so intelligent
'He's so intelligent!'
- c. B2:# Que intel·ligent que és!
B2: how intelligent that is
'How intelligent he is!'

- Result constructions that spell out the attitude towards a degree by means of their *that*-clause are okay as answers.

- (46) B3: És tan intel·ligent que em meravella.
B3: is so intelligent that I(DAT) amazes
'He's so intelligent that it amazes me.'

- What is the difference between *wh*-exclamatives and rising exclamatives?
- Is the possibility of performing the role of answer a good enough test for the pragmatic status of assertion?

4.4 *How very but *que molt?*

- The co-occurrence of *how* and *very* has been analyzed as evidence that an embedded *wh*-clause is an exclamative and not an interrogative:

- (47) a. I know how tall he is. → ambiguous
b. I know how very tall he is. → exclamative

- (48) a. I wonder how tall he is.
b. *I wonder how very tall he is.

- The co-occurrence of *very* is interpreted as evidence in favor of extreme degree. So *very*, *extremely*, etc. are adverbs of the same kind.
- However, why is it impossible to combine *que* and *molt*? Is it because *very* and *molt* are different semantic types?
- Interestingly, we have *so very* but **tan molt*. This parallelism shows either that *so* and *tan* occur in exclamative environments (something that Zanuttini and Portner (2003) do not accept), or that this *very* is not related to the exclamative meaning but rather to the meaning of the degree operator.
- *Very* in the exclamative environment is the intensifier *very* that appears in declarative contexts? (i.e., John is very tall, where *very* is supposed to be of type $\langle\langle e, t \rangle\rangle, \langle e, t \rangle\rangle$).

5 Summary

- The approach I am assuming is different from the previous ones. Namely, I propose an analysis of exclamatives based on the semantics of degree instead of the semantics of questions.
- My object of study is *wh*-exclamatives, a (non-universal) clause type that contains a *wh*-element, a degree operator at the left periphery and a scalar predicate.
- Under my account exclamatives denote truth values and the speaker's attitude determines the minimal value that is exceeded by a property held by an individual.
- Many issues need to be accounted for. Among them, the codification of the attitude component, the pragmatic status of different kind of exclamatives and a few crosslinguistic differences.

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