

A Degree Account of Exclamatives*

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1 Introduction

An exclamation is a speech act performed by a speaker to express surprise at the content of the utterance.

THESIS: There are two different types of exclamation: those whose content is a proposition and those whose content is a degree property ('exclamatives'). The consequence is that there are two different illocutionary force operators that result in an act of exclaiming.

The first type of exclamation is instantiated by (1a), the second type is instantiated by (1b) – (1d).

- (1) a. Robin baked a blueberry pie!
b. What a pie Robin baked!
c. (Oh,) The pie Robin baked!
d. (Boy,) Did Robin bake a pie!

This classification:

- i. is motivated by the fact that exclamatives – but not proposition exclamations like (1a) – are subject to two semantic restrictions
 - ii. enables an account of other characteristics of exclamatives; e.g. the unacceptability of (2).
- (2) a. *Why Robin baked a pie!
b. *How very tall how very many people are!
c. *(Oh,) A pie Robin baked!
d. *(Boy,) Did Robin bake such a pie!

Outline

§2 introduces the notion of an exclamation in terms of speech act theory.

§3 argues for the above classification of exclamations by showing that *wh*-exclamatives (1b), but not proposition exclamations (1a), are subject to two semantic restrictions: the Degree Restriction and the Evaluativity Restriction.

§4 accounts for these differences by postulating two different illocutionary force operators for the two different types of exclamations, and explores the consequences of the analysis.

§5 extends this account to nominal and inversion exclamatives ((1c) and (1d)).

The Appendix extends the account to embedded clauses which have been called exclamatives.

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2 Speech acts & exclamations

- Speech acts are roughly characterized in terms of the linguistic function of the utterance (Austin, 1962; Searle, 1969, 1976) and have two components: their semantic content and the illocutionary force with which that content is communicated.

speech act	function	content
assertion	speaker believes content is true	proposition
interrogation	speaker requests information about content	set of propositions
exclamation	speaker is surprised at content	??

- The illocutionary force associated with the act of exclamation is marked intonationally with emphasis (manifested in lengthening effects) and a falling intonation (Bartels, 1999, 263).¹
- I use the term ‘exclamative’ to refer only to matrix exclamatives. Some claim that exclamatives can be embedded; I address this in the Appendix.
- A *descriptive* is an expression which describes something which either is or is not the case, and can be *descriptively correct*. An *expressive* expresses an emotion at something which is or is not the case, and can be *expressively correct* (Kaplan, 1999).

Scenario 1: You expect a friend to have only a few children; you discover that he has 10.

An utterance of *How very many children you have!* is expressively correct, while an utterance of *How very few children you have!* is not.

- Speech acts of exclamation may be uttered insincerely: “...[W]here the act counts as the expression of a psychological state, [insincerity is] possible. One cannot, for example, greet or christen insincerely, but one can state or promise insincerely” (Searle, 1969, 65).

Scenario 2: You have known a colleague for 3 months and thinks he has impeccable taste.

Upon seeing his well decorated home, your utterance of *What a beautiful house you have!* is nevertheless expressively correct because it is uttered insincerely for reasons of politeness (pace Zanuttini and Portner, 2003).

3 Wh-Exclamatives

This section focuses on exclamatives headed by *wh*-phrases, as in (1b) and (3).

- (3)
- a. How few shoes you own!
 - b. How crazy your mother is!
 - c. What celebrities he knows!
 - d. What a loser he is!

- English isn’t the only language that forms exclamatives from the same types of clauses as questions and free relatives; many do (see Elliott, 1974; Espinal, 1995, for examples from German, Italian, Turkish, Chinese, Romanian, French, Greek, Basque, Dutch and Russian).
- Some *wh*-phrases are impermissible in exclamatives (see §4.2 for a discussion of the crosslinguistic variation in permissible *wh*-phrases).

¹I’ve written some of these exclamations with preceding interjections (*wow, boy, oh*) which can be characterized as reinforcing the illocutionary force with which an exclamation is uttered (Collins, 2004).

- (4) a. *Who he associates with! d. *When she arrived at the party!
 b. *Which people he associates with! e. *Why she bought that pony!
 c. *Where she goes to study!

- The content of *wh*-exclamatives is subject to two semantic restrictions. This makes them unique among:
 - a) declarative exclamations like (1a), which seem to share their illocutionary force; and
 - b) *wh*-interrogatives and free relatives, which seem to share their syntactic form.

3.1 The Degree Restriction

To understand the possible interpretations of a *wh*-exclamative, I will discuss possible scenarios in which it is expressively correct (expressively incorrect exclamations are marked #).

Scenario 3: Benny is American, so you expect him to speak only English. However, you learn that he in fact is fluent in 10 other languages.

- (5) a. (Wow,) Benny speaks eleven languages!
 b. What languages Benny speaks!

- Both (5a) and (5b) can be used to express surprise that the number of languages Benny speaks is higher than expected.
- I'll refer to this as the '**amount reading**,' because it involves the expression of surprise that a (set of) amount(s) satisfies a particular degree property.

Scenario 4: Benny is Romance linguist, and so you expect him to speak only Romance languages. You learn that he can also speak languages from a variety of obscure language families.

- (6) a. (Wow,) Benny speaks exotic languages!
 b. What languages Benny speaks!

- Both (6a) and (6b) can be used to express surprise that the languages Benny speaks are more exotic than expected.
- I'll refer to this as the '**gradable reading**,' because it involves the expression of surprise that a (set of) degree(s) satisfies a particular gradable degree property.
- Just as with the amount reading above, a gradable reading is possible for (6b) despite the fact that it has no overt degree morphology: compare to the declarative exclamation #*Wow, Benny speaks languages!*.

Scenario 5: You know that Benny speaks one Romance language in addition to English. Because his mother speaks French, you assume it is French. But you discover it is Spanish.

- (7) a. (Wow,) Benny speaks English and Spanish!
 b. # What languages Benny speaks!

- While (19) can be used to express surprise that Benny knows two particular languages, (7b) cannot be.
- I'll refer to this as the '**individual reading**,' because it involves the expression of surprise that a (set of) individual(s) satisfies a particular individual property.

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- **Summary:** a *what*-exclamative can be used to express surprise that a set of degrees (= amounts or gradable degrees) has a particular degree property, but not that a set of individuals has a particular individual property. This is the ‘Degree Restriction.’
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This is not the first time exclamatives have been associated with degree readings. Bolinger (1972); Milner (1978); Gérard (1980); Carbonero Cano (1990); Obenauer (1994); Espinal (1995); Villalba (2003) and Castroviejo Miró (2006) mention a connection between degrees and exclamatives. They differ in how they characterize and account for this association.

- This generalization extends to all *wh*-exclamatives, not just those headed by *what*.
- (8) How does Buck ride his horse?
- a. **manner:** bare-backed, saddled
 - b. **evaluation:** beautifully, dangerously, clumsily...
- (8) illustrates that the *wh*-phrase *how* can be used in interrogatives to question two different types of adjuncts: manners and evaluations.
 - Only evaluations are gradable (e.g. can be mapped on to a set of degrees).

Scenario 6: Buck is a rough-and-tumble cowboy, and so you expect him to ride his horse bare-backed. However, you learn he rides saddled.

- (9) a. (Wow,) Buck rides his horse saddled!
b. # (Boy,) How Buck rides his horse!

Scenario 7: Buck is new at being a cowboy, and so you expect that he cannot ride a horse very well. However, you observe him riding it gracefully.

- (10) a. (Wow,) Buck rides his horse beautifully!
b. (Boy,) How Buck rides his horse!

- The fact that *how*-exclamatives are expressively correct only in situations in which the speaker is expressing surprise at a (gradable) evaluation – not a (non-gradable) manner – supports the Degree Restriction.

3.2 The Evaluativity Restriction

For an exclamative to be expressively correct, it is not enough that it express surprise that a degree has a particular degree property. The degree must additionally exceed a contextual standard. In terms of Rett (2007), the degree must be ‘evaluative.’²

3.2.1 Semantic evidence

Scenario 8: Mia expects Brooks’ studio apartment to be 3,000 ft². In actuality, it is 1,000 ft², which is still quite large for a studio.

- (11) #How small your apartment is!

²This perhaps is in the spirit of Espinal’s 1995 proposal that “*wh*-phrases in exclamative sentences... are under the scope of an intensifier operator” (82).

- Although the area of Brooks' apartment is lower than Mia's expectation, it is not objectively small (see Kennedy, 2007, and references therein for some discussion of how this standard is determined), and this is enough to render the utterance of (11) expressively incorrect.

Scenario 9: Mia expects Brooks' studio apartment to be 100 ft². In actuality, it is 200 ft², which is still quite small for a studio.

(12) #How big your apartment is!

- Although the area of Brooks' apartment exceeds Mia's expectation, it is not objectively large, and this is enough to render the utterance of (12) expressively incorrect.

3.2.2 Morphological evidence

Two types of morphological evidence indicate that the form used to express an exclamation must involve explicit comparison to a standard.

(13) a. How *(very) many children you have! b. How ??(very) tall you are!³

1. Some positive-polarity *wh*-phrases require an extreme adverb; their negative-polarity counterparts do not.
2. These same positive-polarity *wh*-phrases form ambiguously evaluative questions, while their negative-polarity counterparts form unambiguously evaluative questions (Rett, 2007).

(14) $EVAL_i \rightsquigarrow \lambda D_{(d,t)} \lambda d. D(d) \wedge d > s_i$

3. An extreme adverb signifies an evaluative construction (i.e. if a degree *d* satisfies a property to an extreme degree then it necessarily exceeds the standard).
4. Conclusion: An exclamation must be used to express surprise that an *evaluative* degree has a particular degree property.

- An aside on extending this characterization to interrogatives:

- There are some interrogatives we know to be unambiguously [+EVAL], but they nevertheless disallow extreme adverbs. (??*How very short is Mary?*)
- “Intensified *wh*-questions have presuppositions that make them incompatible with questioning” (Abels, 2004a, 23-4). *Wh*-questions with intensifiers are good if they occur with a filter for presuppositions (see Karttunen and Peters, 1979; Heim, 1983).

(15) a. My teacher asked me how enormously wide a river would have to be in order to carry 1,000,000 m³ water/sec at 0.3km/h at a width of 10m.
 b. If it is already this hot down here on the main floor, how unbearably hot must there be up on the balcony?

- He identifies these filters as the *in order to* clause in (15a) and the *if* clause in (15b). This is based on their behavior below:

³I have received differing judgments about the extent to which extreme adverbs are obligatory with positive-polarity predicates. All of my informants, however, agree that there is a difference in this respect relative to negative-polarity predicates.

- (16) a. #You have to lure the alien into the trap.
 b. If you want to catch an alien, you have to lure the alien into the trap.
 c. In order to catch an alien, you have to lure the alien into the trap.

Castroviejo Miró (2006) discusses Catalan exclamatives headed by the *wh*-phrase *quin*, which (unlike other Catalan exclamatives) must contain one of two degree quantifiers, *tan* or *més*.

- (17) Quin gat *(tan / més) simpàtic!
 what cat *(so / more) nice
What a nice cat!

- Castroviejo Miró suggests that *més* and *tan* “are degree words that involve a relation between a standard degree and a reference degree...”.
- We can account for the Catalan data the same way we account for the English polarity facts: EVAL, *tan* and *més* all introduce explicit comparison to a standard. Perhaps this is all that the Evaluativity Restriction amounts to.
- English differs from Catalan only in requiring that the morpheme of comparison be covert. There is some independent evidence that EVAL and the comparative morpheme are semantically similar in English.

- (18) a. Old men like to fish. b. Older men like to fish.

While there are some subtle semantic differences between the two forms in (18), it seems clear from the two constructions that the covert EVAL and the overt *-er* both introduce a variable that is valued pragmatically.

4 The Analysis

- Proposition exclamations, like (19), aren’t subject to any semantic restrictions: they are formed with a declarative which denotes a proposition *p*, and in uttering these exclamations, the speaker seems to be expressing surprise that *p*.

- (19) a. Robin baked a blueberry pie! b. Jim stole my anorak!

- *Wh*-exclamatives *are* subject to semantic restrictions.
 - The fact that proposition exclamations aren’t subject to these restrictions as well indicates that they aren’t characteristic of acts of exclaiming in general.
 - The fact that *wh*-clauses in questions and relative clauses aren’t subject to these restrictions indicates that these restrictions are not characteristic of *wh*-constructions.
 - I propose that two different illocutionary forces (IFs) of exclamation are responsible for proposition exclamations, on the one hand, and *wh*-exclamatives on the other.

4.1 Two illocutionary force operators

- The IF for proposition exclamations is straightforward: its semantic content is a proposition and it expresses surprise on the part of the speaker that that proposition is true.

(20) PROPOSITION E-FORCE(p) is expressively correct in C iff the speaker in C believes that p and did not expect that p .

- This IF cannot be the one used to utter *wh*-exclamatives because (i) the denotation of a *wh*-clause is presumably not a proposition, and (ii) it cannot account for the Degree and Evaluativity Restrictions.

- An instructive parallel: complements of the verb *surprise*.

– Although the complements of *surprise* are not exclamatives (see the Appendix), the relationship between *surprise* and its complements provides a parallel to the relationship between exclamation IFs and the content of exclamation.

– Intuitively, a person stands in a ‘surprise’ relation to a proposition. This is transparent when the complement of *surprise* is a CP.

(21) Jan is surprised [_{CP} that marmalade is orange.]

– Furthermore, it is *only* possible to stand in a ‘surprise’ relation to a proposition. But the complement of *surprise* is not always proposition-denoting.

(22) Jan is surprised [_{PP} at [_{NP} the color of marmalade.]]

– This indicates that *surprise* in (22) involves or is associated with a type-shifter that transforms its complement type (an individual property?) into a proposition.

- I assume that this is just what the IF for *wh*-exclamatives does.

(23) DEGREE E-FORCE (\mathcal{D}) is expressively correct in C iff
 $\exists d, d > s$ [the speaker in C believes and did not expect that $\lambda w. \mathcal{D}(d)(w)$].

- The domain of this IF is a degree property. It binds the degree and world arguments of the property, resulting in a proposition which the speaker can express surprise about.

- This correctly predicts that exclamatives can’t be expressed with a multiple-*wh* clause.⁴

(24) *How very tall how very many people are!

- (23), when applied to a type without a degree variable, would result in vacuous quantification, just as in Kratzer (1995) for *always*.

(25) a. *Always when Mary knows French, she knows it well.
 b. Always when a Moroccan knows French, she knows it well.

⁴Ono (2006) argues that Japanese is an exception to this claim. However, the constructions he provides are only felicitous when the two degrees associated with the two *wh*-phrases are causally related, and the construction still has only one exclamative marker (*no da roo*), which makes it a suspect potential counterexample. Thanks to Lawrence Cheung for bringing this data to my attention; it is also discussed in Castroviejo Miró (2006).

- The domain of DEGREE E-FORCE couldn't be a proposition or set of propositions because this wouldn't allow the IF to differentiate between content about degrees and other content.
 - The easiest way to see this is to study the proposal in Zanuttini and Portner (2003). They assume the content of an exclamative is a set of propositions – just like an interrogative in a Hamblin/Karttunen account – and that these propositions are ordered in a given scenario based on some contextually salient property (e.g. 'unexpectedness').
 - In their theory, the semantic contribution of an exclamative is to take the denotation of a question – a set of true propositions in the common ground, D_1 – and widen it to the set of *all* true propositions, D_2 .
 - But propositions which are answers to e.g. *who* questions are just as easily ordered in terms of unexpectedness as those which are answers to e.g. *how many* questions.

(26) What things he eats!

D_1 : {He eats poblanos, He eats serranos} →

D_2 : {He eats poblanos, He eats serranos, He eats jalapeños, He eats güeros}

- This incorrectly predicts that the exclamative in (26) can receive a reading in which the speaker is expressing surprise that the subject eats a particular type of pepper.
- An aside about the semantic origin of these degree readings:
 - Milner (1978) and Gérard (1980) – as summarized in González Ruiz (2002) – argue that what distinguishes exclamatives from other expressions is their ability to have an extreme-degree interpretation in the absence of overt degree morphology.
 - The amount reading (5a) comes easily from the same (covert) quantity operators needed for e.g. *how many* questions (Cresswell, 1976; Rett, 2006).
 - The fact that exclamatives like *What languages Benny speaks!* can also receive a gradable reading (6a) indicates that these constructions can contain a covert gradable predicate (see also Bolinger, 1972; Obenauer, 1994).
 - Unlike quantity operators, the value of this predicate can vary with context (the languages could be exotic, complicated, etc.). Also unlike quantity operators, the distribution of this null predicate is relegated to exclamatives for the most part. Although:
 - (27) a. That's quite a turkey you have there! (read: good, large, crazy, etc.)
 - b. She bought SOME pizza. (read: delicious, expensive, large, etc.)

4.2 The syntactic form of a *wh*-exclamative

A *wh*-exclamative denotes a degree property... what does this say about its syntactic form?

- *Wh*-exclamatives are headed by *wh*-phrases. This suggests that their syntactic form is either a question or a relative clause. With the right accompanying assumptions, the form of an exclamative could be either (or both!) of these.
- It's possible that *wh*-exclamatives are expressed with questions:
 - The traditional semantics of questions – based on their meaning in matrix interrogatives and as embedded clauses – is that they denote sets of propositions (Hamblin, 1973; Karttunen, 1977).

- The theory proposed in Groenendijk and Stokhof (1989) is based on an alternative view of the status of ‘short answers’. (28a) is an example of a short answer to the question in (28).

(28) Which book did you read?
 a. *Birds of America* b. I read *Birds of America*.

- It assumes (unlike Hamblin and Karttunen) that a short answer is a complete answer. Specifically: an interrogative which can be felicitously answered with a list of individuals is an individual property.
- A single *wh*-question is a 1-place relation; a double *wh*-question (‘What did you eat when?’) is a 2-place relation, etc. “The syntactic category and the semantic type of interrogatives are determined by the category and type of their characteristic answers.”
- As Groenendijk and Stokhof argue, a complete account of the semantics of questions must also include type-shifters to account for questions in embedded contexts, in conjunctions or disjunctions, or to account for entailment relations between questions.
- I know of no evidence that *wh*-exclamatives are expressed with questions (as opposed to relative clauses). The above account suggests only that, in light of such evidence, questions must be analyzed as in Groenendijk and Stokhof (1989).

- It’s possible that *wh*-exclamatives are expressed with free relatives:

(29) a. I will eat [_{DP} the things [_{RC} (which) you cooked]] headed relative
 b. I will eat [_{RC} what you cooked] free relative

- Headed relative clauses as in (29a) seem to denote properties (see Jacobson, 1995; Dayal, 1996; Caponigro, 2004, and references therein).
- Free relatives are typically thought of as denoting maximal entities, but this could be the result of a type-shifter from a degree property (à la Jacobson, 1995), and is thereby consistent with the analysis above.
- There are a few indications that *wh*-exclamatives in (at least) English, Paduan and Hebrew are expressed with relative clauses.
- In English, *what* can quantify over amounts in free relatives but not in questions.

- * Carlson’s (1977) and Heim’s (1987) ‘amount relatives’:

(30) Mike put [_{RC} what he could] into his pockets.
 a. #individual reading: for every object *x*, if Mike could put *x* in his pocket, he did.
 b. amount reading: *d* is the maximum amount of objects Mike could put into his pockets, and Mike put *d*-many objects into his pockets.

(31) It would take days to drink [_{DP} the champagne [_{RC} they spilled that evening]]

- * This amount reading parallels the one in (5a) for *What languages Benny speaks!* and is not possible in interrogatives:

(32) Q: What languages do you speak?
 A: English and Spanish A’: # Two

- * But the correlation between *wh*-exclamatives and amount relatives isn't as strong as it could be: *wh*-exclamatives additionally receive a gradable reading (6a) which is impossible for relative clauses (or interrogatives).
- (33) Mike put [_{RC} what he could] into his pockets.
- a. amount reading: *d* is the maximum amount of objects Mike could put into his pockets, and Mike put *d*-many objects into his pockets.
 - b. *gradable reading: Mike put into his pockets all the objects that were shiny/delicious/great/etc. to degree *d*.
- Zanuttini and Portner (2003) argue that Paduan *wh*-exclamatives pattern with Paduan relative clauses (rather than questions) in their ability to scope high in the CP (p. 60):

- (34) a. A to sorela, che libro vorissi -to regalar -ghe?
to your sister, which book want -CL give -her
'To your sister, which book would you like to give as a gift?'
- b. *Che libro, a to sorela, vorissi-to regalar-ghe?
- (35) Che bel libro, a to sorela, che i ghe ga regalà!
what nice book, to your sister, that CL have her given
'What a nice book, to your sister, they gave her as a gift!'

The word order in the exclamative in (35) is unacceptable in an interrogative (34) obligatory in relative clauses in Paduan (Rizzi, 1997; Zanuttini and Portner, 2003).

- There's another advantage in analyzing the *wh*-clauses in *wh*-exclamatives as free relatives: it accounts for the parallel cross-linguistic variation in acceptable *wh*-heads.

- * (4) illustrates that, in English, the following *wh*-phrases cannot head exclamatives: *who*, *where*, *when*, *why* and *which*. Assuming that none of these *wh*-phrases can range over degrees – and that *how*, *how many/few* and *what* can – this is predicted by the Degree Requirement.

- * But (most of) those *wh*-phrases are permitted in e.g. Paduan exclamatives.

- (36) Chi inviterebbe per sembrare importante!
who would-invite for to-seem important
'The people he would invite to seem important!'

- * These are the same *wh*-phrases which pattern differently in free relatives in these languages (Caponigro, 2004).

- (37) a. C'è chi dice sempre sì
that who say-3pl always yes
'There are people who always say yes.'
- b. *There are who always say yes.

- Hebrew exclamatives and free relatives – but not questions – require an overt complementizer (Sharvit, 1999, p. 320 and Roger Schwarzschild, p.c.).

- (38) a. Dan berer ma (*še) karati.
Dan found-out what (*COMP) read-1p
'Dan found out what I read.'
- b. Dan kara ma *(še) ani karati.
Dan read what *(COMP) I read-1p

- ‘Dan read what I read.’
 c. Ma *(še) ani karati
 how *(COMP) I read-3sg
 ‘What I read!’

- Conclusion: although there is some morphological and semantic evidence that *wh*-exclamatives are expressed with relative clauses, adopting a Groenendijk and Stokhof (1989) account of interrogatives predicts that questions, too, can function as the form of a *wh*-exclamative.

4.3 The semantic contribution of an exclamative

There has been contention over whether the content of an exclamative is presupposed or asserted. In the present account, the content of an exclamative is a degree property, it can be neither presupposed nor asserted.

- Arguments that the content is presupposed (Grimshaw, 1979; Zanuttini and Portner, 2003):
 - Exclamatives cannot function as answers to questions.

(39) Q: How many shoes does Amy have?
 A: A lot! A': # How very many shoes Amy has!

 - * The conclusion is that A' is unacceptable because its content is presupposed, rather than asserted, and questions require assertions as answers.
 - * But presupposition need not factor into an explanation of (39): the unacceptability of A' is a consequence of the fact that questions require assertions as answers, and exclamations aren't assertions (see also Castroviejo Miró, 2006). The proposition exclamation *She has a lots of shoes!* is also unacceptable as an answer to (39).
 - Exclamatives are only embeddable under factive verbs.
 - * First, this requires a theory that allows exclamatives to be embedded (see the Appendix).
 - * Second, this conclusion is not accurate (Abels, 2004a; Castroviejo Miró, 2006).
- Arguments that it isn't presupposed (see also Castroviejo Miró, 2006; Mayol, 2008).
 - Unlike true presuppositions, the content of an exclamative can be denied.

(40) A: Mico's wife does macrame.
 B: #Not really; he's not married.

(41) A: How very tall Elwood is!
 B: Not really; he's wearing platform shoes.
 - It also doesn't pass von Fintel's (2004) 'Hey, wait a minute!' test for presupposition.

(42) A: Mico's wife does macrame.
 B: Hey, wait a minute, Mico isn't married!
 B': #Hey, wait a minute, she doesn't do macrame!

(43) A: What incredibly large feet you have!
 B: #Hey, wait a minute, they're not that big!

- Arguments that the content is not asserted (see also Sadock, 1990).
 - It seems wrong for someone, upon hearing Cooper exclaim *How very tall John is!*, to report to a third party that Cooper informed them that John is very tall.
 - Additionally, if a witness was to exclaim *How very tall John is!* on the stand in a court of law, but it turns out that John is not in fact tall, it seems like the witness would not be committing perjury.
 - This inability to assert does not hold for proposition exclamations. Specifically, an utterance of *John is very tall!* in a situation in which it's not the case that John is very tall *would* count as perjury.
- The discussion of the semantic contribution of an exclamative changes given the assumption that its content is a degree property rather than a proposition or a set of propositions.
- According to DEGREE E-FORCE, one can infer from an expressively correct utterance of an exclamative that (a) the speaker **believes** that a high degree satisfies the denoted degree property; and (b) the speaker **did not expect** that high degree to satisfy the property.
- This seems like a correct characterization of the semantic contribution of an exclamative.

5 Nominal and Inversion Exclamatives

Nominal and inversion exclamatives are also subject to the Degree and Evaluativity Restrictions. Extending the above theory to nominal exclamatives is straightforward; extending it to inversion exclamatives isn't.

5.1 Nominal exclamatives

(44) a. (Oh,) The languages Benny speaks! b. (Oh,) Her behavior on the trip!

- Nominal exclamatives are subject to the Degree Restriction; (44a) parallels *What languages Benny speaks!* in its possible interpretations.

(45) (Oh,) The languages Benny speaks!
 a. #individual reading: surprise that Benny speaks English and Spanish
 b. amount reading: surprise that Benny speaks a large amount of languages
 c. gradable reading: surprise that the languages Benny speaks are *P* to degree *d*

- Nominal exclamatives are subject to the Evaluativity Restriction.

Scenario 10: Linda expects the amount of children Leon has to be extremely low/high. It turns out that Leon has an average amount of children: 3.

(46) #(Oh,) The amount of children Leon has!

- Conclusion: nominal exclamatives are uttered with DEGREE E-FORCE rather than PROPOSITION E-FORCE. So the content of a nominal exclamative must be a degree property.
- As before, we have two options in terms of the syntactic form of nominal exclamatives.

- It's possible that nominal exclamatives are expressed with (concealed) questions (this has been proposed by Zanuttini and Portner, 2003).
 - Concealed questions are traditionally embedded definite descriptions with question-like interpretations (Baker, 1968; Heim, 1979).

(47) a. John knows the contest winner. b. John knows who won the contest.
 - Nominal exclamatives, too, are restricted to definite NPs (but see Nathan, 2006; Frana, 2006, for arguments that concealed questions are not restricted to definites).
 - The parallel between the forms is complicated by some restrictive intonational requirements on the form of a nominal exclamative. As far as I can tell, the first syllable of a nominal exclamative must be unstressed (48) and the entire form must be at least 5 but no more than 8 syllables (49).

(48) a. (Oh,) Her behavior on the trip! b. *(Oh,)Susan's behavior on the trip!

(49) a. (Oh,) The height of that building! c. *(Oh,) The height of John!
 b. *(Oh,) The height of the President of the United States!
- It's possible that nominal exclamatives are expressed with (headed) relative clauses (this has been proposed by Portner and Zanuttini, 2005).
 - As I mentioned in §4.2, this is straightforward given the assumption that headed relative clauses denote degree properties (Jacobson, 1995, a.o.).
 - A parallel to amount relatives predicts that nominal exclamatives can only be headed by definites and that, in fact, they cannot contain indefinites at all (Carlson, 1977, 536).

(50) a. The/What/*Some headway Mel made was unsatisfactory.
 b. *(Oh,) The height of some buildings!

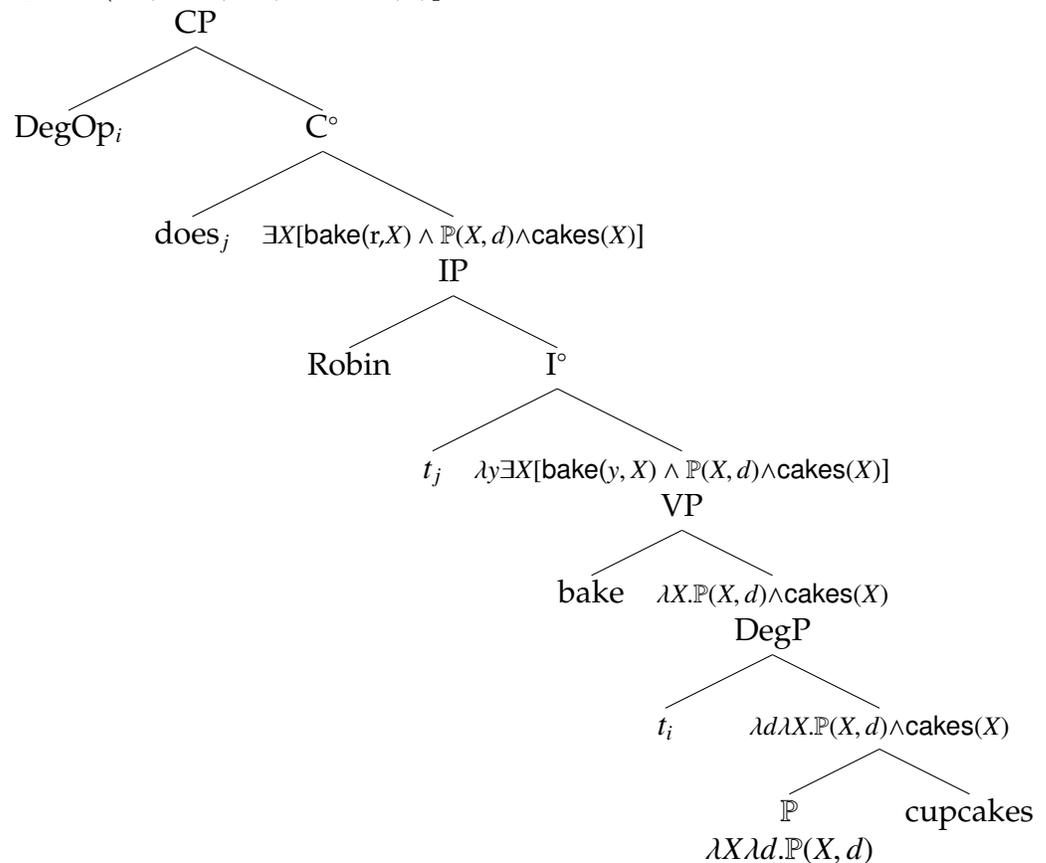
5.2 Inversion exclamatives

- (51) a. (Boy,) Does Robin bake cupcakes!
 b. (Boy,) Can she speak Spanish!

- Inversion exclamatives are subject to the Degree and Evaluativity Restrictions.
 - The utterance in (51a) cannot be used to express surprise at the proposition/fact that Robin bakes cupcakes (which is what we'd expect if it denoted a proposition or set of propositions), but only that:
 - * she bakes cupcakes that are *P* to some high degree *d* (gradable reading);
 - * she bakes cupcakes that are numerous to some high number *d* (amount reading);
 - * that she bakes cupcakes in a way that is *Q* to a high degree *d* (well, zealously; the evaluation reading).
 - The exclamative in (51b), because it lacks a noun to host a null quantity operator or gradable operator, can only have the evaluation reading.
- Is it possible that inversion exclamatives are expressed with (yes/no) questions?

- In a traditional Hamblin/Karttunen semantics, yes/no questions denote sets of propositions (see Abels, 2004b,a, for the argument that they denote singleton sets). As argued above, this is inconsistent with the Degree Restriction.
 - In a Groenendijk and Stokhof (1989) semantics of questions, yes/no questions denote propositions. This is also inconsistent with the Degree Restriction.
 - There are many differences between yes/no questions and inversion exclamatives: 14, to be precise (McCawley, 1973).
- Is it possible that inversion exclamatives are expressed with declaratives (with inversion)?
 - Two consequent issues:
 1. Why do these forms involve inversion?
 2. How do these forms denote a degree property?
 - Suggestion: these questions can be answered in the same way: inversion exclamatives are declaratives which contain a null degree operator.

- (52) a. (Boy,) Does Robin bake cupcakes!
 b. $\lambda d \exists X [\text{bake}(r, X) \wedge \mathbb{P}(X, d) \wedge \text{cakes}(X)]$



- The DegOp is base-generated in a Degree Quantifier position (spec, DegP) and raises to spec, CP. Its trace is a degree d and it λ -abstracts over this trace in its surface position.
- The tree in (52) contains a null predicate \mathbb{P} modifying the noun *cupcakes*. For the evaluation reading, this predicate would be modifying the verb. For the amount reading, this predicate would be a Quantity Operator like Cresswell's (1976) PL.

- We know that \mathbb{P} is independent of the DegOp because (a) it also needs to be posited for exclamatives with overt (*wh*-)operators (53a); and (b) there are inversion exclamatives which do not have it (53b).

- (53) a. What languages Benny speaks!
 b. (Oh,) Does Robin bake delicious desserts!

- Evidence for the null DegOp approach:

- Inversion is independently associated with the presence of an operator in spec,CP (Rizzi, 1996, a.o.). Inversion exclamatives involve inversion because DegOp resides in their spec,CP.⁵
- Negation is one of these operators; inversion exclamatives differ from yes/no question in their incompatibility with matrix negation (McCawley, 1973).⁶

- (54) a. Doesn't Robin bake cupcakes?
 b. *(Oh,) Doesn't Robin bake cupcakes!

- Inversion exclamatives are incompatible with overt Degree Quantifiers, which are also base-generated in the same position.

- (55) a. *(Boy,) Does she have so much money!
 b. *(Boy,) Can she bake such desserts!

- (52) is a suggestion for how to draw a connection between the semantic restrictions on inversion exclamatives and some of their unique syntactic characteristics (there are some I have not addressed, e.g. their incompatibility with indefinites, see McCawley, 1973).

However, the main goal of this paper is only to argue that such semantic restrictions exist and need to be accounted for.

- Any account of inversion exclamatives raises the following question: if natural language has a strategy for converting essentially any syntactic construction into something which denotes a degree property, why – and how – is this strategy relegated to exclamatives?

- (56) *John cooks better than [_{DegP} does Robin bake desserts!]
intended reading: John cooks better than Robin bakes desserts.

6 Conclusion

- Proposition exclamations and *wh*-exclamatives both express surprise on the part of the speaker, and therefore appear to be uttered with the same illocutionary force.
- An examination of the semantic restrictions of *wh*-exclamatives suggests instead that these exclamations must be uttered with an IF operator whose domain is a degree property ('DEGREE E-FORCE').

⁵It remains to be explained, however, why *wh*-exclamatives do not exhibit subject-auxiliary inversion. This, I think, is English-specific: *wh*-exclamatives in Italian and Spanish, for example, involve inversion.

⁶Note that languages like Spanish and Paduan employ expletive negation in exclamatives, but only in *wh*-exclamatives (Portner and Zanuttini, 2000; Espinal, 1995, 80). Villalba (2003) cites examples where exclamatives seem to involve standard negation; this phenomenon, too, is excluded from inversion exclamatives ('hidden exclamatives' in his terminology).

- This accounts for the Degree Restriction and – in conjunction with an account of crosslinguistic variations in the lexical semantics of *wh*-phrases – can account for which *wh*-phrases are permissible in exclamatives (4).
- Building into DEGREE E-FORCE a requirement that the relevant degree exceed a contextual standard accounts for the Evaluativity Restriction and corresponding morphological facts.
- Some additional questions answered:
 - Is the content of an exclamative presupposed or asserted?; **neither**, because this content is not propositional.
 - Is the form of an exclamative a question or a relative clause?; **either**, as long as it denotes a degree property.
- Nominal and inversion exclamatives are also subject to the Degree and Evaluativity Restrictions, which suggests that they, too, denote degree properties.
 - This is straightforward for nominal exclamatives, which can be analyzed as denoting either (concealed) questions or (headed) relative clauses.
 - This is not straightforward for inversion exclamatives – whether their form is analyzed as a question or a relative clause – but requires postulating a null degree operator, which accounts for some morphological idiosyncracies of the form.
- This study portrays exclamatives as a type of degree construction, and thereby suggests that a wide variety of forms have the capacity to denote a degree property in the right circumstances.

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Appendix: “Embedded” exclamatives

This section rounds out the above account by discussing embedded clauses which have in previous accounts been categorized as exclamatives.

The data

- Grimshaw (1979) a.o. claims, based on the ambiguity in (57), that embedded clauses can have either an ‘interrogative’ or an ‘exclamative’ reading.
- My use of the terms ‘exclamative’ and ‘interrogative’ has been restricted to main clauses with exclamative and interrogative illocutionary force. To avoid confusion, I will coin the terms ‘exclamative*’ and ‘interrogative*’ to discuss the readings Grimshaw refers to as “embedded exclamative” and “embedded interrogative”.

(57) Gary knows how high the ceiling is.

- The interrogative* reading: if Gary knows that the ceiling is 3 meters high, it could be true of Gary even if he is a complete stranger to the metric system (and therefore has no idea of the significance of the ceiling’s height).
- The exclamative* reading: the ceiling has a height d , and d surpasses the relevant standard of highness, and Gary knows that the ceiling surpasses that standard of highness.
- There’s some morphological evidence that embedding verbs select for interrogatives* and exclamatives*.

(58) a. Gary was surprised at how very high the basement ceiling is.
 b. *Gary wondered how very high the basement ceiling is.

(59) a. Ethel was surprised at what a dork Charles is.
 b. *Ethel wondered what a dork Charles is.

- Verbs which Grimshaw characterizes as only being able to embed exclamatives* can in fact embed questions that do not form not acceptable matrix exclamatives (Lahiri, 2000; Huddleston, 1993).

(60) a. Amy is surprised at who Bruno married.
 b. Amy is surprised at why Bruno married her.
 c. Amy is surprised at who Bruno married and why.

Specifically, these embedded forms, unlike matrix *wh*-exclamatives, are not subject to the Degree and Evaluativity Restrictions.

- THE CONUNDRUM:

If a verb like *surprise* has the same meaning as an illocutionary force of exclamation, how can it embed *wh*-clauses which cannot form acceptable matrix exclamatives? And if, on the other hand, it does not have such a meaning, how does one account for the presence of ‘exclamative-specific’ morphology in embedded constructions like (58) and (59)?

A new analysis of “embedded” exclamatives

- The ambiguity in (57) is a result of optional evaluativity in embedded clauses, not the ability of interrogatives and exclamatives to be embedded.

(61) Gary knows how high the ceiling is.

a. **Knowledge of Degree:**

The ceiling’s height is d and Gary knows its height is d .

b. **Knowledge of Evaluativity:** The ceiling’s height is d , $d > s_{high}$, and Gary knows its height $> s_{high}$.

c. **Knowledge of Evaluative Degree:** The ceiling’s height is d , $d > s_{high}$, and Gary knows its height is d and $> s_{high}$.

- The first two readings come from a straightforward application of the null EVAL morpheme from Rett (2007) (see (14)).

(62) Gary knows how high the ceiling is.

a. $\text{knows}(g, \lambda p \exists d [p = \lambda w. \text{high}(w)(c, d)] \wedge p(w^{\textcircled{a}}))$

b. $\text{knows}(g, \lambda p \exists d [p = \lambda w. \text{high}(w)(c, d) \wedge d > s_{high}] \wedge p(w^{\textcircled{a}}))$

- The third reading – the **Knowledge of Evaluative Degree** reading – is one in which the degree d is existentially bound inside of the proposition, and the set of propositions is therefore a singleton set.

(63) $\text{knows}(g, \lambda p. p = \lambda w \exists d [\text{high}(w)(c, d) \wedge d > s_{high}] \wedge p(w^{\textcircled{a}}))$

- Extreme adverbs in embedded clauses (58) merely signify evaluativity.
- An exclamative*-embedding verb like *surprise* can embed an evaluative clause, but it need not. It can embed a clause headed by a *wh*-phrase which does not range over degrees. In these ways, it differs from E-FORCE. See Abels (2004a) for a detailed account of the semantics of exclamative*-embedding verbs.
- This theory does not extend to the embedded interrogatives* in e.g. (58b) and (59b). It seems plausible that *wonder* is incompatible with *wh*-phrases with extreme adverbs for the same reasons that the illocutionary force of interrogation is (see the discussion surrounding (15)).