The Interaction between Presupposition and Focus: Classical Greek *Wh*-Exclamatives

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Abstract
In this paper, we argue against the claim that exclamatives could be reducible to interrogatives in Classical Greek as sometimes argued for English. Exclamatives are original in that they denote presupposed propositions, are headed by specific (*wh*-morpheme *h*-) and focused *wh*-items. They necessarily involve degrees. We try to make sense of all these features by showing that the exclamative speech act resides in the meeting of knowledge (presupposition, specificity) and unexpectedness (focus, extended scales) at the semantic/pragmatic/syntax interface.
Keywords: exclamative; exclamation; focus; presupposition; degree; ὅς; τίς

1 Introduction

Classical Greek (henceforth CG)[1] data challenge existing theories on exclamatives. Exclamative clauses and the speech act they convey are often described with respect to the interrogatives. Indeed, across languages, *wh*-exclamatives often share with interrogatives a *wh*-term, as in English ((1)/(2)). But in CG, this is not the case. As shown below, (3)[2] (an exclamative) and (4) (an interrogative) display items belonging to different paradigms.

(1) *What* a (kind) boy came here yesterday!
(2) *What* are you doing?

[1] I will consider as CG Attic Greek spoken in the fifth and fourth Centuries BCE. This study was run on a corpus made of Plato's *Respublica*, *Protagoras* and *Gorgias*, Xenophon's *Cyropaedia* and *Anabasis*, and Demosthenes' first 21 speeches. Other authors have also been considered: Aeschylus, Aristophanes, Euripides, Isocrates, Lysias, Menandros and Sophocles. The abbreviations are those of the classical dictionary of H. G. Liddell and R. Scott ((1996) *A Greek-English Lexicon*. With a revised supplement, revised and augmented by H. S. Jones, with the assistance of R. McKenzie, Oxford, Clarendon Press).

[2] I gloss the examples according to the Leipzig glossing rules. Here are the glosses specific to Greek: AOR = aoriste (a past tense), OPT = optative (a mood). Unless mentioned, translations are taken from the Perseus website http://www.perseus.tufts.edu.

(3) *Οἷον* εἰργάσασθε ἐπιλαβόμενοί μου. (Pl. *R.* 450a)
what.a-ACC.N.SG do-IND.AOR.2PL challenge-PTCP.AOR.NOM.M.PL PRO-GEN.1SG
'What a thing you have done in thus challenging me!'

(4) *Ποῖον* αὐτοὺς ἀδίκημα διέφυγεν; (Isoc. 4.111)
which-ACC.N.SG PRO-ACC.M.PL injustice-ACC.SG escape-IND.AOR.3SG
'What crime have they overlooked?'

This specific material is a clue that something more needs to be said about the syntax and the semantics of the two types of clauses. It will help us understand how the exclamative speech act is construed. It does not reside in a specific illocutionary operator but is rather the compositional effect of several features: presupposition, focus and extended degree scale. The main contribution of my article is to highlight the central role of focus, very little discussed in previous works.

The paper is organized as follows: in section 2, I present CG *wh*-exclamatives. In section 3, I argue that they denote presupposed propositions. In section 4, I show that the focus plays a crucial role in their semantics. In section 5, I combine the previous results with the degree present in every CG *wh*-exclamative and show how the exclamative speech act is derived.

2 Classical Greek data

CG exclamatives display several peculiarities. First, the heading term is explicitly a degree term; second, the *wh*-morpheme used in exclamatives is not the same as that used in interrogatives. It has a specific semantics. Finally, there seems to be a one-to-one correspondence between direct and embedded exclamatives which allows us to carry over to the former the points made on the latter. I shall address these points in turn.

2.1 Wh-*exclamative items are terms of degree*

In CG *wh*-exclamatives, only four items can be used: οἷος 'what a' (5), ὅσος 'how much/many' (6), ἡλίκος 'how much/many' (7) and ὡς 'how' (8).

(5) *Οἷον* πεποίηκας οὕτω φανεὶς τοῖς Ἰνδοῖς. (X. *Cyr.* 2.4.5)
what.a-ACC.N.SG do-IND.PRF.2SG thus appear-PTCP.NOM.M.SG ART-DAT.M.PL Indian-DAT.PL
'What a thing you have done thus appearing before the Indians!' (my translation)

(6) *Ὅσον* λόγον πάλιν κινεῖτε
how.much-ACC.M.SG discourse-ACC.SG again move-IND.PRS.2PL
περὶ τῆς πολιτείας. (Pl. *R.* 450a)
about ART-GEN.F.SG polity-GEN.SG
'What a huge debate you have started afresh about this polity!'

(7) Δύσμορ', *ἡλίκον* λαλεῖς. (Men. *Sam.* 255)
poor-VOC how.much-ACC.N.SG talk-IND.PRS.2SG
'Unlucky you, how you prattle on!' (my translation)

(8) Ὡς φθονερὸς εἶ καὶ δυσμενής. (Ar. *Th.* 757)
how envious-NOM.M.SG be-IND.PRS.2SG and hostile-NOM.M.SG
'You pitiless monster!'

They are morphologically composed as such:
h-οῖ-ος
h-όσ-ος
h-ηλίκ-ος
h-ω(ς)
As is obvious, they all share the *wh*-morpheme *h*-, presented in the next section. -ος in the first three items is the morpheme of case-number-gender. We are left with -οι-, -ος-, -ηλικ- and -ως. -οι- appears in the deictic/anaphoric τ-οι-οῦτ-ος[3] 'such' and the interrogative π-οῖ-ος;[4] 'which?'. In (9), the answer to the question ποῖον; is δεινόν 'horrible'. In (10) τοιοῦτος is anaphoric to ψευδής 'false'. This means that -οι- stands for a noun modifier, especially for a gradable adjective[5].

(9) Ξα. καὶ μὴν ὁρῶ νὴ τὸν Δία θηρίον μέγα.
PTC PTC see-IND.PRS.1SG PTC ART-ACC.M.SG Zeus-ACC monster-ACC.SG big-ACC.N.SG
Δι. *ποῖόν* τι;
which-ACC.N.SG INDF-ACC.N.SG
Ξα. *δεινόν*. (Ar. *Ra.* 288-289)
horrible-ACC.N.SG
'Xanthias. And now, by Zeus, I see a monstrous beast.
Dionysus. What kind?
Xanthias. O horrible!'

(10) (Ξε. Καὶ λόγος οἶμαι *ψευδὴς* οὕτω κατὰ ταὐτὰ νομισθήσεται τά τε ὄντα λέγων μὴ εἶναι καὶ τὰ μὴ ὄντα εἶναι.)
Θεαι. Πῶς γὰρ ἂν ἄλλως *τοιοῦτος* γένοιτο; (Pl. *Sph.* 240e-241a)
how PTC PTC otherwise such become-OPT.AOR.3SG
'(Stranger. And therefore a statement will likewise be considered *false*, if it declares that things which are, are not, or that things which are not, are.)

[3] τ- is the morpheme elsewhere found in the definite article; -ουτ-ος is the medial/neutral demonstrative.
[4] π- is the interrogative *wh*-morpheme. τ(ι)- in an allomorph found in τίς 'who' etc.
[5] The other possibilities include at least relational adjectives (E. *Rh.* 278-279) and NPs in the genitive (A. *A.* 1087-8).

Theaetetus. In what other way could a statement be made *false*?'

Likewise, it can be shown that *-os-* stands for an amount. It appears in τ-οσ-οῦτος 'so/this/that much/many' and π-όσ-ος; 'how much/many?'. ηλικ- is either a variant of -οσ- or relates more specifically to age (τ-ηλικ-οῦτ-ος, π-ηλίκ-ος). Finally, -ως denotes the manner as in οὕτ-ω(ς) 'thus' and π-ῶς; 'how?'. But ὡς denotes the degree when it bears on gradable adjectives, gradable adverbs or on verbs, in which case one can supplement it with a fuzzy adverbial like 'much'[6]. This means that all CG *wh*-exclamatives explicitly range among gradable, i.e. degree expressions.
This has been previously argued for French by Milner 1978, for Catalan by Castroviejo Miró 2007 and for English by Rett 2009, 2011. Even when there is no overt degree morphology, only the degree interpretation is available[7]. This is shown for example in Rett 2009 for (11). (11) cannot be uttered to say that it is impressive that Mimi speaks Javanese and Tagalog (individual reading). It can only be uttered to say that it is impressive that Mimi speaks languages that have such and such characteristics, say, that are so exotic.

(11) What languages Mimi speaks!

The degree denotation is also shown by the necessity to use a sentential exclamative if we are dealing not with gradable, but with relational properties. (12) with a relational property and an unambiguous *wh*-exclamative is discarded. A sentential exclamative (13) must be used instead. On the other hand, in (14) a gradable property (length) is available for a *wh*-exclamative.

(12) #A. This plane is the president's.
B. What a plane it is!
(13) A.This plane is the president's.
B. (This plane is) the president's!

[6] This is the case in (32), literally 'how much you rightly-think'.

[7] Many languages have *who*-exclamatives. Rett (2008:footnote 3) argues that despite the absence of overt degree morphology, these exclamatives also have a degree interpretation (roughly, "Who I met" in these languages means "What wonderful people I met"). D'Avis (2001, 2002) builds most of his theory on *wer* (=who)-exclamatives in German, but Abels (2004:footnote 4) casts doubt on such sentences: they may be "rhetorical" questions, thus indirect speech acts and not exclamatives *per se*. Finally, Chernilovskaya and Nouwen (to appear) point out that this is not the case for Dutch: *wie* (=who)-exclamatives have a specific syntax and do not have a degree interpretation. They conclude from this fact that degrees are not universally present in *wh*-exclamatives and that something else, more encompassing, must be found, such as their *noteworthiness* notion. Nonetheless, they cannot dispense with scalarity. As I am here mainly concerned with Classical Greek, a language that always displays gradable predicates and/or overt degree morphology, I will stick to the idea that degree is always involved, at least in this language.

(14) A.This plane is 500 m long.
B. What a plane it is!

In CG, only *wh*-exclamatives in οἷος are available to express sentences like (14). I shall come back to the question of why this is so in section 5.

2.2 Wh- items: the wh-*morpheme* h-

Another common point of the four *wh*-items used in *wh*-exclamatives is that the *wh*-morpheme takes the form of *h*-. This section is devoted to highlighting the meaning of *h*-, especially with respect to the other *wh*-morpheme available τ(ι)/π- which is used in interrogatives. We shall learn several differences between exclamatives and interrogatives. The morpheme *h*- is also present in *h*-ός. Ὅς is a polyfunctional *wh*-item. It is used in:

– Restrictive relatives (15),
– Free relatives (16),
– Embedded interrogatives (17).

(15) Ἡμεῖς ὑμῖν παρεσχόμεθα τὸν νόμον ὃς ἀπαγορεύει
we-NOM you-DAT.PL produce-IND.AOR.1PL ART-ACC.M.SG law-ACC.SG which-NOM.M.SG forbid-IND.PRS.3SG
μηδένα τῶν ἐν τῇ πόλει πλείω σῖτον
nobody-ACC.M ART-GEN.M.PL in ART-DAT.F.SG city-DAT.SG more-ACC.M.SG grain-ACC.SG
πεντήκοντα φορμῶν συνωνεῖσθαι. (Lys. 22.6)
50 measure-GEN.PL buy.together-INF.PRS
'For we have produced to you the law which forbids anyone in the city to buy up corn in excess of fifty measures.'

(16) παραδοῦναι ὃς διὰ τοῦτον
hand.over-IND.AOR who-NOM.M.SG because.of DEM-ACC.M.SG
καὶ τὰ τούτου ἁμαρτήματα ἀπέθανεν. (Lys. 6.22)
and ART-ACC.N.PL DEM-GEN.M.SG offence-ACC.PL die-IND.AOR.3SG
'to hand over (the man) who had been put to death in order to shield this man and his offences' (Perseus modified)

(17) Εἴ τις ὑμῶν εἰς Φερὰς ἀφῖκται,
if INDF-NOM.M.SG you-GEN.PL to Pherae-ACC come-IND.PRF.3SG
οἶδ'(ε) ὃ λέγω. (D. 19.158)
know-IND.3SG what-ACC.N.SG mean-IND.PRS.1SG
'Any of you who have been to Pherae will know what I mean' (Perseus modified)

Despite this variety of usages, ὅς semantics is reducible to one main feature. As a matter of fact, its distribution is limited to some cases. I sketch here an analysis present in much more detail in Faure 2010.

(15) displays a restrictive relative clause with a definite antecedent. In the other configurations (non restrictive/appositive relatives, relatives with an indefinite antecedent and free relatives), other items (like ὅστις[8]) can show up as well and the distribution between ὅς and ὅστις hinges on other factors (cf. below). But in the case of (15), only ὅς is used in the corpus. This is the only case where we grasp all and only the individuals sharing the two properties of being a law and forbidding buying too much corn. The maximality entails the complete overlap, the perfect identification between two subsets. This is not the case with an indefinite expression like *two cats that are black* where we do not pick up all the black cats.

In (16), the free relative clause ὃς διὰ τοῦτον... refers to a known individual (Andocides' slave). Only ὅς can show up in such free relatives. On the other hand, in generic or non specific free relatives, another item (ὅστις) can be used, along ὅς.

In (17), the ὅς-clause must be interpreted as an embedded interrogative. In the first place, the hallmark of free relatives, i.e. the conjunction of the selection between the matrix and the embedded verb, is not met (Eriksson 1982). Moreover, the clause denotes a proposition ('what I mean' = 'that there is an inn in front of the Dioscuri's temple') and not an individual ('what I mean' ≠ 'the thing I'm thinking of'). Finally, (17) forms a pair with (18) and (19), where the interrogative τίς or ὅστις are used. But (18) and (19) are not in the same context as (17). Ὅς is used in positive contexts, while the other items τίς/ὅστις are used in negative ones. As a matter of fact, negative contexts extend to nonveridical contexts as defined in Zwarts 1995 (20)[9].

(18) Ἴσως οὔπω οἶσθα *τί* λέγω. (Pl. *Grg.* 500a)
maybe not.yet know-IND.2SG what-ACC.NT mean-IND.PRS.1SG
'You may not know yet what I mean.'

(19) Οὐκέτι οἶδα ἔγωγε *ὅ τι* ἔλεγον. (Pl. *R.* 334b)
no.longer know-IND.1SG I.myself what-ACC.N.SG mean-IND.PRET.1SG
'I no longer know what I did mean.'

[8] Morphologically, ὅστις is composed of ὅς and the indefinite τις, but the morpheme *h-* is not active in this item, maybe under the influence of the indefinite.

[9] Note that this is also the case in thetic sentences: there is something that (ὅς) (cf. Lys. 22.6), there is no one that (ὅστις) (cf. Pl. *R.* 496d).

(20) Nonveridical operators
Let *O* be a monadic sentential operator. *O* is said to be veridical just in case $Op \Rightarrow p$ is logically valid. If *O* is not veridical, then *O* is nonveridical.

Moreover, ὅς-clauses are limited to cognitive predicates like οἶδα 'know'[10], whereas τίς/ὅστις can also be used with interrogative predicates such as ἐρωτάω 'ask' (21) and τίς even appears in direct questions (22). This suggests that ὅς-clauses are restricted to contexts where the true answer is known by the speaker or at least by the subject of the matrix verb and that they denote the true answer to the question rather than the question itself (as shown for *wh*-clauses with *know* by Groenendijk & Stokhof 1984).

(21) Πάλαι ἐρωτῶ *τίς* ποτε ἡ δύναμίς
for.long.time ask-IND.PRS.1SG who-NOM.F.SG PTC ART-NOM.F.SG power-NOM.SG
ἐστιν τῆς ῥητορικῆς. (Pl. *Grg.* 456a)
be-IND.PRS.3SG ART-GEN.F.SG rhetoric-GEN.SG
'This has made me ask you all this time what in the world the power of rhetoric can be.'

(22) *Τίς* αὕτη; (Pl. *Phlb.* 16b)
what-NOM.F.SG DEM-NOM.F.SG
'What is the road?'

To sum up, ὅς can be used only when identification, specificity or definiteness are at stake:
- In restrictive relatives with definite antecedent where maximality implies identification between two subsets,
- In referential, specific free relatives,
- In embedded interrogatives that denotes the true answer to a question.

As ὅς bears the morpheme *h*-, the identification property must be attributed to it. From the first condition (see the previous section) that an exclamative must explicitly involve degree, ὅς cannot show up in exclamatives. Nevertheless, we are left with the conclusion that identification is somehow involved in the characterization of exclamatives. Moreover, the morpheme *h*- is mostly used in relative terms[11]. The idea that exclamatives may be cognate to relatives and especially to free relatives has already been raised in Zanuttini & Portner (2003:62) and in Rett 2009 (on Hebrew data). Note nevertheless the restrictions on this connection dating back to Elliott (1974:236-7): free relatives denote properties or individuals, exclamatives denote propositions (see section 3). This issue is solved if we

[10] More on this point below in 2.3 and 3.2.2.2.

[11] The case in point is the use as embedded interrogative. Faure 2009 proposes that ὅς-clauses be uniformly treated as relatives and that the so-called embedded interrogatives are in fact free relatives used as concealed questions.

consider that the morpheme *h-* does not have the same usage in the two clause types. In the exclamatives, it does not bind an individual variable at the end of the derivation (yielding an individual), but the degree variable before the end of the derivation, the individual variable being bound by existential closure, thus yielding a proposition, as desired. For an example see below (73).

If I am right, this means that exclamatives cannot be on a par with interrogatives, something already drawn from the morphology in introduction. This has important consequences for some of the most influential theories on exclamatives such as d'Avis 2001, 2002 or Zanuttini & Portner 2003 that both claim that exclamatives are interrogatives i.e. denote sets of propositions (according to Karttunen's 1977 theory). This claim is crucial in that it elicits the treatment of exclamatives as a widening of a set (Zanuttini & Portner) or as alternatives to a norm proposition (d'Avis). It does not seem to be tenable for CG data (an account of where the exclamatives-as-interrogatives idea comes from is given in 5.3). The exact correspondence between indirect and root exclamatives suggests that exclamatives denote propositions rather than sets of propositions, since they are embedded under propositional attitude verbs. I address this point in the next section.

2.3 Direct and indirect exclamatives

The claim that exclamatives are embeddable is not uncontroversial. The suspicion arose because of the mismatch in English between what is interpreted as an exclamative in direct and in indirect environments. Rett 2011 correctly notes that direct exclamatives in *who* do not exist but that a predicate like *surprise* does embed such sentences (24) with a meaning similar to what one could expect (23) to mean.

(23) *Who came to the party yesterday!
(24) Patricia was surprised by who came to the party yesterday.

Along the same lines, *surprise* embeds multiple *wh*-exclamatives, which are not possible as direct exclamatives: (26) (borrowed from Rett) is felicitous, but not (25).

(25) *Who ate what!
(26) I'm surprised at/by who ate what.

Moreover, direct exclamatives necessarily have a degree interpretation (recall example (11)) while *wh*-clauses under *surprise* do have an individual reading. Apparently, (27) is felicitous when Mimi speaks Javanese and Tagalog and when it is this fact that surprises me.

(27) I am surprised at/by what languages Mimi speaks.

Finally, a sentence is claimed to convey only one speech act and (24), (26) and (27) are definitely assertions and not exclamations.

None of these arguments holds for CG. First, the items used in embedded exclamatives are exactly the four that introduce direct exclamatives: οἷος, ὅσος, ἡλίκος, ὡς ((28) through (31)). Given that they are degree expressions, exclamatives have the same degree interpretation, be they direct or embedded. The individual interpretation never arises.

(28) *Οἰκτείρω* σε, τάλαν Καλλία, *οἷ'* ἔπαθες. (Simon. fr. 509)
be.sorry-IND.PRS.1SG PRO-ACC.2SG poor-VOC K-VOC what.a-ACC.N.PL suffer-IND.AOR.2SG
'I am sorry, poor Callias, for what you suffered.' (my translation)

(29) Οὐχ ὁρᾷς ὡς καλῶς οἰνοχοεῖ καὶ εὐσχημόνως; (X. *Cyr.* 1.3.8)
NEG see-IND.PRS.2SG how nicely pour.vine-IND.PRS.3SG and gracefully
'Do you not see how nicely and gracefully he pours the wine?'

(30) Ὁρᾷς οὖν ἡμᾶς *ὅσοι* ἐσμέν; (Pl. *R.* 327c)
see-IND.PRS.2SG PTC us-ACC.1PL how.many-NOM.M.PL be-IND.PRS.1PL
'But do you see how many we are?'

(31) ... ὁρῶν *ἡλίκος* ἤδη
see-PTCP.NOM.M.SG how.much-NOM.M.SG already
καὶ *ὅσων* κύριός ἐστι Φίλιππος, ... (D. 6.6)
and how.many-GEN having.power-NOM.M.SG be-IND.PRS.3SG P-NOM
'if anyone views with confidence the present power of Philip and the extent of his dominions,...'

Second, the verb meaning 'surprise' θαυμάζω embeds only these items (apart from the rare ἡλίκος).

(32) θαυμάζων ὡς ἐφρόνει. (X. *Cyr.* 1.4.20)
wonder-PTCP.NOM.M.SG how be.shrewd-IND.PRET.3SG
'Wondering how shrewd the boy was.' (my translation)

(33) θαυμάζων *ὅσοι* τῶν μὲν ἄλλων ἕνεκα
wonder-PTCP.NOM.M.SG how.many-NOM.M ART-GEN.N.PL PTC other-GEN.N.PL for
τῆς ψυχῆς ποιοῦνται τὴν ἐπιμέλειαν,
ART-GEN.F.SG mind-GEN.SG do-IND.PRS.3PL ART-ACC.F.SG care-ACC.SG
αὐτῆς δὲ ταύτης μηδὲν τυγχάνουσιν φροντίζοντες. (Isoc. 9.41)
PRO-GEN.F.SG PTC DEM-GEN.F.SG nothing-ACC.N happen.to.be-IND.PRS.3PL take.care.of-PTCP.NOM.M.PL

‘And he marveled at how many people, while they cultivate the mind for all other ends, take no thought of the mind itself.’ (Perseus modified)

(34) Τὰ λοιπά μου κλύουσα *θαυμάσῃ* πλέον,
art-ACC.N.PL rest-ACC.N.PL I-GEN hear-PTCP.PRS.NOM.F.SG wonder-SBJV.AOR.2SG more
οἵας *τέχνας* τε καὶ πόρους ἐμησάμην. (A. *Pr.* 476-7)
what.a-ACC.F.PL art-ACC.PL PTC and resource-ACC.PL devise-IND.AOR.1SG
‘Hear the rest and you shall wonder the more at the arts and resources I devised.’

Otherwise, with items of the τίς/interrogative paradigm, it changes its meaning from ‘surprise’ to ‘ask with surprise’, i.e. it becomes a real interrogative verb (35), much as ‘wonder = marvel’ and ‘wonder = ask oneself’.

(35) *Θαυμάζει* τί δήποτε Δημοσθένης αὐτοῦ κατηγορεῖ. (D. 19.80)
wonder-IND.PRS.3SG why PTC D-NOM PRO-GEN.M.SG accuse-IND.PRS.3SG
‘He will wonder why his accuser is Demosthenes.’

Third, there are embedded *multiple* exclamatives (36) and this is the result of the embedding of *direct* multiple exclamatives (37). Note that in these exclamatives each *wh*-items bears on a different predicate. The conjunction of the two makes the situation unexpected.

(36) Γνώσεταί γε (...) τότ’ ἤδη
understand-IND.FUT.3SG PTC then henceforth
ὁ δῆμος *οἷος* *οἷον* θρέμμα
ART-NOM.M.SG people-NOM.SG what.a-NOM.M.SG what.a-ACC.N.SG creature-ACC.SG
γεννῶν ἠσπάζετό. (Pl. *R.* 569a-b)
beget-PTCP.PRS.NOM.M.SG breed-PRET.3SG
‘The demos will then learn what it is and what a creature it begot.’

(37) Ὦ τλῆμον, *οἵας* *οἷος* ὢν ἁμαρτάνεις. (E. *Alc.* 144)
PTC poor-VOC what.a-ACC.F.PL what.a-NOM.M.SG be-PTCP.NOM.M.SG lose-IND.PRS.2SG
‘Unhappy man, being so good a husband, to lose so good a wife!’

The last point raised by Rett is that of the speech act. The embedding predicate spells out one or two aspect(s) of the exclamative speech act (see 5.4): θαυμάζω and the verbs carrying a focusing operator (see for example (29)/(30)) spell out the focus/unexpectedness dimension; cognitive factive predicates encode the presupposition; emotive factive verbs encode both. This means that part or totality of what constitutes the exclamative speech act is carried out by an operator of the matrix clause. But this operator licenses a feature of the embedded clause and do not substitute for it. If I am right in positing a straightforward

equivalence between direct and indirect exclamatives, we should be able to draw conclusions for *wh*-exclamatives in general from the observation of one or the other. As exclamatives are embedded under attitude verbs, they must denote propositions.

2.4 Wrap up

In this section, we learned that CG *wh*-exclamatives range among degree terms, that they are somehow identificational and that embedded exclamatives do exist and have exactly the same properties as root exclamatives. Both denote propositions. In the following sections, I am going to explain what it means for a clause to be headed by an identificational term, what the parallel between embedded and root exclamatives tells us and what role degrees play.

3 Exclamatives as presupposed propositions

That something in exclamative clauses is taken for granted is widely accepted since the seminal works on exclamation in the 1970s of Elliott 1974 and Grimshaw 1979, be it called factivity (Zanuttini & Portner 2003), presupposition (Abels 2010) or implicature. Abels 2010 and Rett 2011 cast doubt on several tests that are supposed to show this factive feature, but Abels finally proposes a new argument in favor of it, while Rett discards the factivity. I shall follow Abels and take up the problem anew first on English data before going back to CG, especially concerning embedding verbs. But it should be recalled first that exclamatives denote propositions, as shown in 2.2.

3.1 Previous discussions[12]

3.1.1 Embedding under factive verbs

The first point to be discussed is the embedding of exclamatives by factive verbs, e.g. *know* in (38). Given that factive verbs are attitude verbs and that they are presuppositional, exclamatives are taken to denote presupposed propositions. But there are several objections to this claim. First, there is not an exact correspondence between so-called embedded exclamatives and direct exclamatives in English (see section 2.3). We therefore cannot carry over a conclusion drawn from embedded clauses to direct exclamatives. Second, if exclamatives are presuppositional, they should keep their presupposition under other predicates, which is not necessary. As highlighted by Abels 2010, this is only explained under Kiparsky & Kiparsky's 1970 discutable view that non-factive operators are antifactive. Otherwise, the presupposition might be conveyed by the factive verb and not by the clause. As there are many biased arguments on both sides, I shall go back to this issue below and discard this test for the moment.

[12] The reader would find a good, though somewhat different, account of the following points in Abels 2010.

(38) Peter knows what a success Michael had.

(39) Peter knows/does not know that Michael had a lot of success. →Michael had a lot of success.

3.1.2 Incapacity to answer a question

The second point is that a presupposed proposition does not convey anything new and that it should therefore be unable to answer a question, which is borne out for exclamatives: (40). But, it can also be explained pragmatically: the exclamation is not the right speech act to answer a question (Rett 2011). This is probably a better account, given that we have some clue that there might be something asserted in exclamatives (see below the comment on examples (45) and (46)).

(40) Question: How tall is John?
Answer: Very tall.
Answer: #How tall John is!

3.1.3 Hey, wait a minute *and* Not really *tests*

A third point is made up by the *Hey, wait a minute!* test, made popular by von Fintel 2004. *Hey, wait a minute!* marks the reaction of the hearer when she does not endorse the presupposition of the speaker's utterance. (41) ((41), (42), (45) (except B'), (46) and (47) are from Rett 2008:198-200) shows that *Hey, wait a minute!* does not discard the asserted part (does macramé), but can discard the presupposed part (that Mico is married). But the part of the exclamative one exclaims on cannot be discarded this way (42).

(41) A: Mico's wife does macramé.
B: Hey, wait a minute! Mico's not married.
B': #Hey, wait a minute, she doesn't do macramé!

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

Actually, (44), the French version of (42), sounds totally acceptable to me (note that the test otherwise works for French, see (43), which translates (41)). This means either that the test is misleading for exclamatives[13,14] or that exclamatives have at least a presupposed part.

[13] Much more on the weakness of this test in Abels (2010:148-150).

[14] An anonymous reviewer points out to me that the *hey, wait a minute* test is even more confusing, for it seems to also identify conventional implicatures, which would mean that it is a test for general assertorically inert material. I do not need to go into these details here.

(43) A: La femme de Mico fait du macramé.
B: Non, mais attends ! Mico n'est pas marié.
B': #Non, mais attends ! elle ne fait pas de macramé !

(44) A: Quels pieds gigantesques !
B: Non, mais attends ! Ils ne sont pas si grands que ça !

On the other hand, the *Not really* test discards the asserted part of the utterance. In (45) it is felicitously used only to discard that Mico's wife does macramé and not that Mico is married. This test has some effect on exclamatives as shown by (46), which would mean that exclamatives have some asserted part. A word of caution is in order here, however, for Abels 2010 notices that the *Not really* test does not always fail on presupposition. In (47), it discards the presupposition that Sue smoked.

(45) A: Mico's wife does macramé.
B: #Not really; he's not married.
B': Not really; she rather hand-knits.

(46) A: How very tall Elwood is!
B: Not really; he's just wearing platform shoes.

(47) A: Sue stopped smoking.
B: Not really. She never smoked.

The embedding and the rejoinder tests leave us with a confused picture. The next section is an attempt to disentangle it.

3.2 Rescuing the presupposition

3.2.1 English exclamatives: sensitivity to plugs, holes and filters

Abels 2010 points out that those tests are not conclusive. He goes a step further and applies to exclamatives Karttunen's 1973 tests for presuppositions. In Karttunen's theory, there are three environments for presupposed expressions: holes, where the presupposition is projected (e.g. negation); plugs where it is prevented from projecting (e.g. *tell*); filters where the presupposition projects but only locally (as shown later, see for example van der Sandt 1992) (e.g. conditionals). Abels claims that exclamatives behave the same way as run-of-the-mill presuppositions. In (48) with a hole (negation), the presupposition projects. Indeed, it cannot be denied as shown by the infelicitous follow-up. (49) is an example of a plug (the verb *tell*), the presupposition does not project and it can be denied by a follow-up. Finally, and crucially, in (50) (Abels' 23a), the exclamative in the scope of *tell* does not project. A weakness of this test is that there is no way to come up with a case where an exclamative would be in the scope of a hole.

(48) Fred didn't stop drinking, (#but he has never drunk). → Fred used to drink.
(49) Friends often tell me that Fred stopped drinking, but he has never drunk. /→ Fred used to drink.
(50) Friends often tell me what a wonderful cook I am – I always tell them it is the ingredients, not my skill as a cook. /→ I am a wonderful cook

The second part of Abels' proof is that exclamatives pattern with presuppositions and not with conventional implicatures, something that could have been expected, given the exclamatives' evaluative/emotional content, a feature attributed to conventional implicatures by Potts 2005. Appositive NPs are well-known conventional implicatures. They are not sensitive to plugs as presuppositions are. (51) contains the appositive NP *a confirmed psychopath* and entails the truth of the proposition that Chuck is a confirmed psychopath. When embedded under a plug for presupposition like *say* in (52), the truth of this proposition survives, contrary to the presupposition in (50)[15].

(51) Chuck, a confirmed psychopath, is fit to watch the kids.
(52) Sheila says that Chuck, a confirmed psychopath, is fit to watch the kids.

On the basis of this test, English exclamatives are presupposed propositions. It does not carry over to CG, for we are not able to build such tests on a corpus study. We can assume that CG passes at least some of the previous tests. However and fortunately, we have other clues, among which are the morpheme *h-* and the embedded exclamatives.

3.2.2 CG exclamatives: morpheme h- and embedded exclamatives

CG exclamatives display more clues that help us characterize them as presupposed propositions. The first one is the identificational feature of the *wh*-morpheme *h-*, the second one is the one-to-one correspondence between direct and embedded exclamatives.

3.2.2.1 Morpheme h-

Recall that the *wh*-morpheme *h-* is used when identification is possible. Depending on the situation, the morpheme *h-* has several roles and identification is an encompassing term for specificity, definiteness etc. What is its role in the case of exclamatives? If we go back to

[15] As pointed out to me by an anonymous reviewer, things may be more intricate. The conventional implicature globally projects only in a speaker oriented (*de re*) reading (as opposed to a subject of the matrix verb *de dicto* oriented reading). It remains that there are cases where conventional implicatures bypass the plugs for presuppositions. This issue is addressed by Saebø 2011 who defends a view that ultimately amounts to challenging the conventional implicature status of nominal appositives. Discussing this matter would take us too far away from our topic.

example (3), repeated here for convenience, the part εἰργάσασθε x ἐπιλαβόμενοί μου 'in challenging me you did x' has been added to the common ground and is thus presupposed.

(3) *Οἷον* εἰργάσασθε ἐπιλαβόμενοί μου. (Pl. *R.* 450a)
what.a-ACC.N.SG do-IND.AOR.2PL challenge-PTCP.AOR.NOM.M.PL PRO-GEN.1SG
'What a thing you have done in thus challenging me!'

But it is also the case for the variable part x of the proposition. The x corresponds to οἷον i.e. to a certain thing that has a certain property to a certain extent (recall section 2.1). What this thing is, what this property is and what degree on the scale of this property this thing attains is known by every participant in the discourse situation. That is why the morpheme *h-* is used and not the other *wh*-morpheme τ(ι)/π- (which means that someone is missing the information). This is in line with the fact that exclamative DPs are usually definite in English as well as in CG. In addition, in CG, the DP is in the genitive case (53). To be honest, there are very few examples without a definite article, though they might have a definite interpretation (54).

(53) τῆς μωρίας. (Ar. *Nu.* 818)
ART-GEN.F.SG folly-GEN.SG
'What folly!'

(54) Οἴμοι παρανοίας. (Ar. *Nu.* 1476)
PTC madness-GEN.SG
'Ah me, what madness!'

Rett 2011 notes that exclamative DPs are usually definite, but confesses that her account provides no explanation for it. In my account, the definite article would basically play the same role as the morpheme *h-* and bind the degree of a (possibly contextually recoverable) property.
Coming back to (3), the proposition as a whole belongs then to the common ground and (3) is tantamount to *you did something very embarrassing in thus challenging me*. However, what degree the embarrassment attains is not spelt out and this is the main contribution of the exclamative: saying that some degree known by everyone is attained and not being able to spell it out. I shall return later to this claim, which is for the moment informal. Suffice it for now to point out that the proposition denoted by the *wh*-exclamative is added to the common ground.

3.2.2.2 Embedded exclamatives and embedded interrogatives
Let us turn now to exclamative embedders. In section 2.3, we saw that CG provides a straightforward correspondence between direct and indirect exclamatives. In section 3.1.1,

we saw that exclamatives are embedded under factive verbs. There was a suspicion that their presupposed flavor comes from the embedding verb. Here I show that exclamatives are embedded under factive verbs because they are *intrinsically* presupposed, contrary to *that*-clauses whose interpretation depends on the embedder (the proposition they denote is presupposed under *know*, but not under *believe*).

As for English (Elliott 1974, Grimshaw 1979), CG *wh*-exclamatives are not embedded under interrogative verbs such as ἐρωτάω 'ask'. They share this property with ὅς-clauses. Recall from section 2.2, that ὅς-clauses with cognitive verbs denote the true answer to the question (the crucial examples are (17), (18) and (19)). But there is not a complete overlap between predicates that embed ὅς-clauses and predicates that embed exclamatives. Ὅς-clauses denoting the true answer to a question are embedded under cognitive factive predicates (οἶδα 'know' (17), μανθάνω 'understand' etc.) and under veridical predicates (δῆλόν ἐστι 'be obvious', σαφές ἐστι 'be clear'[16] etc.). They are not embedded under emotive factive predicates. On the contrary, *wh*-exclamatives are embedded under cognitive AND emotive factive predicates (e.g. οἰκτείρω 'pity' (28), στένω 'moan' etc.). They are not embedded under veridical predicates[17]. This has two major consequences.

The first consequence is that if *wh*-exclamatives in CG (and arguably in many languages) are licensed only after factive predicates, one can infer that they convey a factive feature[18], due to the conjunction of the presupposed part of the proposition and the use of a specific *wh*-morpheme: *h*-. If this proposal is correct, there is no need of a factive operator as argued in Zanuttini & Portner 2003. This factive feature is a presupposition, if we follow Abels 2010 and *wh*-exclamatives denote presupposed propositions. Alternatively, Castroviejo Miró 2007

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[16] Contrary to factive predicates, veridical predicates entail the truth of their complement only when not embedded under a nonveridical operator (see (20) for a formal definition). Δῆλόν ἐστι is such a predicate:

(i) Δῆλον οὗ τεύξεται προσρήματος. (Pl. *Phdr.* 238b)
clear-ACC.N.SG what-GEN.N.SG get-IND.FUT.3SG name-GEN.SG
'We know for sure what name he (the man who drinks too much) will get.'(my translation)

[17] An anonymous reviewer points out (i) to me as a potential exclamative example.

(i) Τούτῳ δὲ δῆλον ὡς γυνὴ κακὸν μέγα. (E. *Hipp.* 627)
DEM-DAT.N.SG ptc clear how/COMP woman-NOM.SG evil-NOM.N.SG great-NOM.N.SG
'It's clear how great an evil woman is.' (the reviewer's translation)/'The clear proof that woman is a great bane is this.' (Perseus)

Like D. Kovacs, the Perseus translator, I take it to mean 'it is clear that woman is a great evil', for ὡς is both a complementizer and a *wh*-term meaning *how*. Moreover, I know of no example of δῆλον with οἷος, ὅσος or ἡλίκος that could be an exclamative. And even if we take it to mean *how* here, it could be the ὅς-clause denoting the true answer to a question πῶς; 'how ?' and not an exclamative, ὡς being ambiguous like the English *how* (section 4.2 provides further syntactic clues that help disambiguate ὡς embedded exclamatives and interrogatives, such as the prolepsis).

[18] This remark was already in Elliott (1974:239): "[given that] exclamatory complements cannot occur at all with non-factives, (...) it really makes sense to speak of exclamatory complements as being factives."

proposes that exclamatives do not denote propositions but facts, a proposal which I will not discuss in detail here.

The second consequence is that clauses that denote true answers to questions and exclamatives do not have the same distribution. To put it otherwise, exclamatives are reducible neither to interrogatives (something we already knew), nor to true answers. The criterion for question embedding is veridicality[19] (Égré 2008, Faure 2010). On the other hand, exclamatives, being presupposed, require factivity and do not settle for veridicality.

3.3 Wrap up

In this section, I have come back to the long-standing debate on the presupposed character of exclamatives. I discussed it first on English data and highlighted the fuzziness of many tests. The best proof turned out to be Abels' test with respect to plugs for presupposition. Exclamatives are sensitive to plugs along with run-of-the-mill presuppositions. Then, I turned to CG data and built on what we learnt from the *wh*-morpheme *h-* in section 2.2 and on the exact correspondence between direct and embedded exclamatives to draw conclusions. Exclamatives are limited to factive predicates, contrary to embedded interrogatives that denote the true answer to a question, which require only veridicality.

The conclusion is that *wh*-exclamatives are, both in English and CG, presupposed propositions. Now the question arises as to what a sentence made of a presupposed proposition contributes to the conversation, i.e. what the exclamative speech act is.

4 Focus: What we learn from syntax

In the previous section we saw that *wh*-exclamatives denote presupposed propositions, but also that this presupposition is particular in that it is made of two parts: the proposition from which the element denoted by the *wh*-term has been abstracted and the *wh*-term itself headed by the morpheme *h-*. The *wh*-term leaves a part of the proposition unexpressed: the amount, the degree to which the property is surprising and even the property itself with οἷος. This is surprising under the view that the whole content is presupposed and then known. In this section, we shall focus on this point and on what more the *wh*-term has to tell us. Once again, exclamatives will be compared to ὅς-clauses denoting the true answer to a question, but this time on the syntactic side. We shall see that the *wh*-term lands in a topic-like position in the case of ὅς-clauses, but in a focus-like position in the case of exclamatives and interrogatives. We explain to what extent this mismatch between ὅς-clauses and exclamatives raises the exclamative effect.

[19] This does not explain why interrogatives are not embedded under emotive factive predicates, for factive predicates are a subset of veridical predicates (recall the definition of veridical operator from (20)). Faure 2010 argues that, along with veridicality, assertivity is a required feature to embed interrogatives, a feature that emotive factives do not possess.

4.1 The left periphery of the CG clause

Ὅς and τίς embedded interrogatives used with cognitive predicates have several differences. One of them is particularly interesting: the peculiar phenomenon of the prolepsis. In a sentence with a completive, the NP that should be the subject of the verb of the embedded clause is placed in the matrix and bears the case assigned by the matrix verb to its object[20]. Thus, in (55), the subject of the embedded verb ἔχοι is the king. It is represented in the matrix clause by αὐτόν, a pronoun in the accusative case that does not play any semantic role with respect to the matrix verb. It seems only to be an anticipation of the subject of the embedded clause, a kind of topicalization. Panhuis 1984 has shown that the NP in the prolepsis is always topical.

(55) Ἤιδει αὐτὸν ὅτι μέσον ἔχοι
know-PRET.3SG PRO-ACC.M.SG COMP middle have-OPT.PRS.3SG
τοῦ Περσικοῦ στρατεύματος. (X. *An.* 1.8.21-22)
ART-GEN.N.SG Persian-GEN.N.SG army-GEN.SG
'He knew that he (the King) held the centre of the Persian army.'

Τίς-, but not ὅς-clauses accept this phenomenon (56).

(56) Ἤλεγχον τὴν κύκλῳ πᾶσαν χώραν
enquire-IND.PRET.3PL ART-ACC.F.SG circle-DAT.SG all-ACC.F.SG country-ACC.SG
τίς ἑκάστη εἴη. (X. *An.* 3.5.14)
what-NOM.SG each-NOM.F.SG be-OPT.IND.3SG
'(The generals) enquired about each district of all the surrounding country.'

These data suggest that τίς and ὅς do not move up to the same position in the left periphery of the clause. As with many languages, the left end of the clause in CG is devoted to discourse functions. In a non generative, non transformational framework, Matić 2003 proposed a very fine-grained scheme of the Greek clause word order. I give the narrow focus informational structure under (57) as modified in Bertrand 2009.

(57) [Topic] [Topic] [Topic] [Focal material] [Verb] [Topic] [Rest of the clause]
Frame Frame Continuous Continuous
contrastive-exclusive

[20] Actually, there is another type of topicalization where the topicalized NP bears a case assigned in the embedded clause (see E. *Ba.* 173-174). In this case, the topicalized XP is not necessarily the subject of the embedded verb; it is even not necessarily an NP. I will not go into detail here. It is sufficient for my point to know whether a topicalization, whatever form it takes, is possible or not.

We note that CG has several positions for topics to the right of which there is a position for focus. Interestingly, Matić and Bertrand show that this structure is embeddable and recursive and that each clause has its own structure. The study of the prolepsis suggests that τίς has to its left a position available to prolepsed NPs. This is not the case for ὅς. I will claim that this is due to the fact that ὅς is at the leftmost edge of the clause. This means that there is either an intermediate position between ὅς and τίς, or that ὅς and the prolepsed NP occupy the same position. Be that as it may, if we map these results onto the structure (57), ὅς and the prolepsed NP occupy a high topic-like position, while τίς occupies either a lower topic or the focus position. I shall argue that it is the focus position.

It has been pointed out that *wh*-interrogative terms and focus have many features in common. As a matter of fact, the interrogative term determines what will be the focus of the answer. In (58), *who* determines and constrains the informational structure of the answer: the subject of *came* must be focused. That is why B is a felicitous answer to A, but not B' where the verb is focus.

(58) A: Who came?
B: $[\text{Bill}]_F$ came.
B': #Bill $[\text{came}]_F$.

We end up with the following mapping:

(59)	[topic]	[focus]	[Rest of the sentence]
	(prolepsed NP)	τίς	
	ὅς		

This is confirmed by the interpretational properties of the terms. We learnt from section 2.2 that ὅς is identificational. It is not surprising that it moves up to the specifier of a topic position, typically occupied by presupposed material, to check its identificational feature. On the other hand, τίς is non identificational. It moves up to the focus position typically devoted to new/unknown material, to check its non identificational feature. The topic head can be realized as a veridical/factive complementizer ὅτι (de Boel 1980), as in (55) where the prolepsed NP is in its specifier. This presentation is rather sketchy[21], but is sufficient to understand the remainder of the proof.

4.2 Wh-exclamatives and the left periphery

If we now turn back to the exclamatives, an interesting fact appears. Though headed by the *wh*-morpheme *h*-, the exclamatives accept the prolepsis. In (30), the pronoun ἡμᾶς is coreferent with the subject of the embedded clause, but is placed in the matrix, where it

[21] The reader is referred to Faure 2010 for further development.

receives the accusative case from ὁρᾷς (see also (D. 9.61)). Nevertheless it does not receive any semantic role from it. We are then in the same situation as in (55) and (56). This phenomenon is widely attested. This suggests that the exclamative term is in the same position as τίς. This is unexpected under the view that a *wh*-term with the morpheme *h*- should move to the highest position to check its identificational feature. Consequently, we are left with an identificational expression in a non identificational (focus) position.

4.3 Wrap up

To sum up this section, I have showed that the left periphery of the CG clause is made of the articulation of (at least) two phrases, projections of two heads. These heads are underspecified and can host cognate material. The leftmost is identificational. It hosts topic expressions, veridical and factive complementizers and ὅς-phrases. The rightmost is non identificational. It hosts focus expressions, nonveridical complementizers, τίς phrases and exclamatives phrases.

Interestingly, this mapping carries over to direct exclamatives. In (60) the NP ὁ κεραμών 'the bowl' is topicalized and precedes ὅσος[22] which is in the lower position of the left periphery. Note that it cannot be *in situ* because all *wh*-exclamative terms move up to the left periphery in CG.

(60) ὁ κεραμὼν ὅσος. (Ar. *Lys.* 200)
ART-NOM.M.SG bowl-NOM.SG how.muc-NOM.M.SG
'What a splendid bowl it is!'

If my syntactic account is correct, this means that *wh*-exclamatives are presupposed propositions with a focused *wh*-term. Note that there is *a priori* no contradiction between presupposition and focus. Run-of-the-mill presupposed expressions, such as definite NPs, can be focused. This is the case in (61).

(61) A: Who came yesterday?
B: [Your brother]$_F$ came yesterday.

Importantly, the association put forward here between non identification and focus is in line with an informational conception of focus[23] and not with a contrastive conception of focus. However Rizzi 1997 associated the focus position in the left periphery with contrastive focus, the informational focus remaining *in situ*. In our view both types of focus are both informational and contrastive. The narrow focus position in the scheme of the CG clause (57) is an informational focus that can, moreover, be contrastive (Bertrand 2009).

[22] Note that in Greek the copula ἐστι(ν) is not obligatory.

[23] Focus seen as what the sentence contributes to the conversation.

This is in line with Schwarzschild 1999 conception of focus as related to givenness. Eventually the two notions merge (see section 5.4). The informational side of focus is useful to account for unexpectedness. The contrastive side of focus will prove useful in the next section. A well-known effect of focus is that it raises a set of alternative values. In the case of exclamatives, these alternatives belong to a definite, ordered scale. They were more expected than the actual value. This is the point under examination in the next section.

5 Scalarity, degree, widening and unexpectedness

So far, we have learned that CG *wh*-exclamatives are headed by degree terms, that they denote presupposed propositions and that their *wh*-term is in a focus position. In the present section I tie together these three features, showing that they are interdependent. The function of the focus is to open up the potential scale involved in the degree term, extending it to the surprising element. Thus I build on Zanuttini & Portner's 2003 notion of widening, but I explain it in a complete different way.

5.1 The focus effect

An effect of focus is to open up a set of alternative propositions identifiable from the topical part of the sentence. It is the focus semantic value (Rooth 1992). For example the focus semantic value of (62) is the set of propositions where another (human) individual loves Arlequin (63)[24].

(62) $[\text{Silvia}]_F$ loves Arlequin.

(63) $[[\ [\text{Silvia}]_F$ loves Arlequin $]]^f = \{\text{love}(x, a) \mid x \in E\}$, where E is the domain of individuals

(64) $[[\ [\text{Silvia}]_F$ loves Arlequin $]]^\circ = \text{love}(s, a)$

In a declarative sentence the focus semantic value exists apart from the ordinary semantic value of the sentence (in this case (64)). This is not the case in an interrogative sentence, at least in some theories of questions. For example Hamblin 1973 takes a question to denote the set of the possible answers to the question, e.g. (66) for (65). The meaning of a *wh*-interrogative sentence is just the focus semantic value of its answers (Rooth 1992). This is not surprising, given that the *wh*-term stands for what is focused in the declarative sentence that constitutes the answer.

(65) Who loves Arlequin?

(66) $[[\text{Who loves Arlequin?}]]^\circ = [[\ [\text{Silvia}]_F$ loves Arlequin $]]^f$

[24] In the formalization, I shall ignore the intensional part.

5.2 Degree and scalarity

What about *wh*-exclamatives? *Wh*-exclamatives do have a focused term: the *wh*-term, but they do not denote a set of propositions. They denote propositions (they are embedded under propositional attitude verbs). This means that their meaning is not the meaning of the focus semantic value. But what is the meaning of the ordinary semantic value of an exclamative? In (3), the *wh*-term is οἷον. Its focus semantic value cannot be (67)[25] because of the ban on individual interpretation of *wh*-exclamatives (see section 2.1).

(67) $[[\text{οἷον εἰργάσασθε}]]^f = \{\text{do (you, x)} \mid x \in E\}$, where E is the domain of individuals

We saw in section 2.1 that *wh*-exclamatives have only a degree interpretation. This means that one exclaims only on the degree attained by a property and not on the property itself or on the individual bearing the property. We also saw that the morpheme -οι- stands for a gradable property that is contextually evaluated. Gradable properties are taken, at least since Creswell, to include a degree variable. Creswell took adjectives like *tall* to be functions from properties to degree relation, i.e. <<e,t>, <e, <e,t>>>, for he treated degrees as other individuals and adjectives as having as basic meaning their attributive meaning. If degrees are considered as specific entities in the ontology (let us note them *d*), <<e,t>, <e, <e,t>>> writes as <<e,t>, <d, <e,t>>>. Here we will take as basic meaning for gradable adjectives, the predicative meaning of adjective, much like Heim 2000, and *tall* will be for us <d, <e,t>>, a function from degrees to properties: [[tall]] = $\lambda d_d.\lambda x_e.$tall(x, d) (meaning x is tall to the degree d). Note that, along with Heim 2000, we assume that being tall to the degree *d* means being tall to the degree *d* and all lesser degrees on the tallness scale. -οι- stands for a gradable predicate variable, functioning like a pronoun, i.e. whose sense is retrieved contextually. Its meaning is then (68)[26].

(68) $[[\text{-οι-}]] = \lambda d_d.\lambda x_e.$ -οι-(x, d)

Along with degree interpretation, the second ingredient of exclamation is unexpectedness on which I concur with Rett (2008, 2009)[27]. The degree attained by the property is *above both the relevant standard and the speaker's expectations* so that it provokes her exclamation. It seems that in a scenario where you expected Robert to be 5 feet tall and *where he is actually 5.5 feet tall*, it is not felicitous to utter (69).

[25] For simplicity's sake, I ignore part of the proposition and the tense.

[26] Recall from section 2.1 that in h-οι-ον, -ον is nothing but the case morphology, which I ignore in the derivation.

[27] A feature noted a long time ago, e.g. in Elliott (1974:242) "the function of exclamations is clearly to talk about adnormal or unexpected situations". See also Michaelis & Lambrecht 1996.

(69) How tall Robert is!

(70) A: You know what? Rosalie made five cakes for the party.
B: What a nice person she is!

This means that to exclaim, the degree of the property does not only need to be unexpected, but also to be above a relevant standard. On the other hand, in a scenario where you expected Robert to be 6.5 feet tall, you cannot utter (69), unless your evaluation of what 6.5 feet tall would be like were under what it actually is. On the contrary, you can utter (69), if Robert is in fact 7 feet tall, i.e. above both the relevant standard and *your expectations*. In this last case, we retrieve unexpectedness. Similarly, exclamatives especially arise in contexts where the speaker has just been given a new piece of information that she did not expect. This kind of situations triggers exclamations such as in the short dialogue (70). Rett refers to this property to be above a standard as evaluativity, also used in positive adjectives. It is encoded through an operator she dubs EVAL[28]. (71) gives the meaning of this operator, where s is a pragmatic variable, left unbound in the semantics, that returns the correct threshold for the gradable property P.

(71) $[[\text{EVAL}]] = \lambda P_{<d, <e, t>>}.\lambda d_{d}.\lambda x_{e}.[P(x, d) \wedge d > s_{P}]$

The role of the identifying morpheme *h-* is to say that the degree *d* of the property is known. Importantly, it is not the whole scale up to *d* that triggers the exclamation, but only the maximum degree *d* attained by the property. *h-* binds only this highest degree. To put it otherwise, *h-* functions as a maximality operator with, in addition, the information that the degree is known.

As an approximation, I will treat *h-* as a definite article, but polymorphic and binding here a degree as illustrated in (72). As with the definite article, the formula does not incorporate the presuppositional part of the meaning. Recall that having a property to a degree *d* is having a property to the degree *d* and all lesser degrees. (72) says that *h-* binds the degree *d* such that all the other degrees to which *x* possesses the property P are equal to or lower to *d*, i.e. *h-* binds the maximal degree of the property as possessed by *x*. This binding does not intervene at the end of the derivation but inside the *wh*-phrase.

(72) $[[\text{h-}]] = \lambda P_{<d, <e, t>>}.\lambda Q_{<e, t>}.\lambda x_{e}.\exists d_{d}[P(x, d) \wedge \forall d'_{d}[P(x, d') \rightarrow (d' \leq d)] \wedge Q(x)]$

[28] In her thesis (2008:chapter 3), she discusses the advantages of this operator over Kennedy's 2007 POS.

(73) proposes a derivation of (3)[29] and gives its semantic value (see above, section 5.1). It says that there is a maximum degree to which *x* possesses the property -οι- and that this degree exceeds the standard. What the formula does not incorporate is that this maximum degree is known to the speaker[30] (the effect of the morpheme *h-*). But that does not suffice. What triggers the exclamative effect is the association between this known degree and the fact that it is focused as shown in its focus semantic value (74), i.e. the fact that this maximum degree is compared to other degrees of the same property. Exclamatives cannot be accounted for if these two levels are not taken into account. Otherwise the meaning of (3) would not be different from "you did a thing that has the property -οι- to a (maximum) degree that I know".

(73) Derivation of $[_{(4)}[_{(3)}$h- $[_{(2)}$EVAL –οιον$]]_i$ $[_{(1)}$ εἰργάσασθε $t_i]]$.

(1) $[[$εἰργάσασθε $t_i]] = \lambda x_e.do(you, x)$
(2) $[[$EVAL – οιον$]] = \lambda d_d.\lambda x_e.[$-οι-$(x, d) \wedge d > s_{-οι-}]$
(3) $[[$h- $[_{(2)}$EVAL – οιον$]]] = \lambda Q_{<e,t>}.\lambda x_e.\exists d_d[$-οι-$(x, d) \wedge (d > s_{-οι-}) \wedge \forall d'_d($-οι-$(x, d') \rightarrow d' \leq d) \wedge Q(x)]$
(4) $[[$οἷον εἰργάσασθε$]] = \lambda x_e.\exists d_d[$-οι-$(x, d) \wedge (d > s_{-οι-}) \wedge \forall d'_d($-οι-$(x, d') \rightarrow d' \leq d) \wedge do(you, x)]$
$\hookrightarrow_{\text{existential closure}} \exists x_e.\exists d_d[$-οι-$(x, d) \wedge (d > s_{-οι-}) \wedge \forall d'_d($-οι-$(x, d') \rightarrow d' \leq d) \wedge do(you, x)]$

(74) $[[$οἷον εἰργάσασθε$]]^f = \{\exists x_e[do(you, x) \wedge$ -οι-$(x, d) \wedge (d > s_{-οι-})] \mid d \in D\}$, where D is the domain of degrees

5.3 Exclamative focus semantic value

Exclamatives denote propositions. Their ordinary semantic value and their focus semantic value are not equivalent, a crucial difference with interrogatives. As the focus is on the degree variable, the set of propositions that constitute the focus semantic value have the specific property to be both ordered and oriented. This was not the case for (62) where the alternative set is made of, say, {Silvia loves Arlequin; Lisette loves Arlequin; Araminte loves Arlequin}. This means that the exclamative fixes the degree to the uppermost degree *available* on the scale.

This opens up the possibility of widening, called for by Zanuttini & Portner 2003 and intuitively attractive. They propose an account of the Paduan *wh*-exclamatives in (75).

[29] In order to keep things simple, I have not related the exclamative to the speaker as I should have. That would give:
$[[$οἷον εἰργάσασθε$]](w) = \forall w' \in$ Dox(speaker)$(w) \rightarrow \exists p.p(w') = \{\exists x_e.\exists d_d[$-οι-$(x, d) \wedge (d > s_{-οι-}) \wedge \forall d'_d($-οι-$(x, d') \rightarrow d' \leq d) \wedge do(you, x)\}$

[30] Note that this is not trivial for I can know that *x* has the property P without knowing to what degree.

(75) Che roba che l magna!
What stuff that he eats
'The things he eats!'

According to them, exclamatives are sets of propositions, like interrogatives, and the difference between the two types of speech acts resides in the factivity of exclamatives and in the pragmatics. (75) denotes the set of propositions where the *wh*-phrase is replaced for example by peppers. They present the set in the increasing order of spiciness: {he eats poblanos; he eats serranos; he eats jalapeños}. To utter (75), the speaker must notice that the eater also eats a more spicy pepper, say, habanero. Therefore the set widens to {he eats poblanos; he eats serranos; he eats jalapeños; *he eats habaneros*}.

In my account of CG *wh*-exclamatives, this is not possible. The exclamation always bears on a gradable expression. The food is not something gradable (except in quantity). The propositions vary according to individuals and not to elements belonging to a scale (Kennedy 2007). The set denoted by the exclamative would rather be a set of propositions varying according to the degree attained by a contextual property, say, spiciness: {he eats something spicy; he eats something very spicy; he eats something enormously spicy}. It happens that the strength of the spiciness of the peppers they propose is different for each pepper and that each pepper matches a proposition of this set. But even in that case, their set is not naturally ordered and oriented as the degrees of a gradable property are. This predicts that a widening could intervene not at the uppermost end of the scale but, say, in the middle, between poblanos and serranos, a non-desirable result, for (75) would become infelicitous in this context.

In my view, the widening can be seen as a side effect of the application of the focus on a gradable property. This has the advantage to provide an ordered scale of propositions that is widened by a proposition where the property has (at least) one degree more. As exclamatives are not sets of propositions, but propositions, this means that the ordinary semantic value of an exclamative is the proposition that widens the focus semantic value of the clause and not the entire set.

5.4 Wrap up

In this section we saw how the focus feature of CG *wh*-exclamatives combines with the necessary presence of a gradable property. First, the speaker's expectations have been disappointed. She has expectations or prejudices on several points. She may exclaim only on one of these points. Second, to be disappointed, the expectations must have alternatives. These alternatives are not free, they necessarily belong to an ordered scale. Scales are a feature of gradable properties. That is why the speaker can only exclaim on gradable properties (or on quantities). Third, for the speaker to be able to exclaim, the alternatives must be activated. The fact that the gradable property is in the focus activates the

alternatives. From an informational point of view, the speaker has been given a piece of information that exceeded her expectations. By uttering an exclamation, she shows that she is reluctant to add it to the common ground, which is correlated to the fact that she keeps in mind the alternatives. The double nature of focus (informational and contrastive) is borne out.

6 Concluding remarks

CG *wh*-exclamatives show features that have been for a long while recognized for exclamatives across languages. Here is what Michaelis & Lambrecht proposed in their 1996 paper:

- Presupposed open proposition.
- Scalar extent.
- Assertion of affective stance: expectation contravention.
- Identifiability of described referent.
- Deixis.

CG exclamatives are special in that they present a specific *wh*-operator, the morpheme *h*-, that encodes the identification, and in that the *wh*-phrase can be shown to be in a focus position. My account provides new arguments for why exclamatives and interrogatives do not have the same semantics. It ties together the different features of exclamatives and shows how they are interdependent: both the focus and the degree features derive from the unexpectedness. Focus and degrees are tied in the sense that the focus opens the degree scale. Being a presupposed proposition (the speaker knows what the exclamative denotes), the piece of information conveyed by the exclamative is the expressive and not the descriptive content. The exclamative displays the reluctance of the speaker to accept the content of the exclamative. Note that to account for CG exclamatives, we do not need a factivity operator or a specific illocutionary operator. The illocutionary force is the effect of the combination of presupposition, focus and degree.

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