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Complementizers in Sardinian *wh*-exclamatives and clefts

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This paper presents data from the Sardinian dialect spoken in Baunei (Baunese), that has a distinguished complementizer system. It will be shown that *wh*-exclamatives in this variety pattern with the complementizer *chi* 'which, who, that' also used in clefts and relative clauses but not with the complementizer *ca* 'that' used in complement clauses of factive verbs. This observation is surprising under the analysis of Portner & Zanuttini (2003) according to whom *wh*-exclamatives express factivity. More support of common properties between *wh*-exclamatives and clefts will be provided by additional data from some Italian varieties, Basque and Greek. It will be argued in line with Guitiérrez-Rexach (2008) and Demonte & Fernández-Soriano (2009) that the complementizer *chi* used in *wh*-exclamatives and clefts in Sardinian does not encode any semantic feature such as factivity but marks finiteness and plays an information structural role, i.e. it draws the boundary between focused and background material. It will be suggested that what clefts and exclamatives have in common is that they are two different kinds of focus construction. Exclamatives express scalar focus, whereas clefts express exhaustive focus.

KEYWORDS: *wh*-exclamatives, complementizer, clefts, information structure, Sardinian.

1. Introduction

In some Romance languages and varieties, *wh*-exclamatives can realize an overt complementizer, e.g. *che* in Italian or *que* in Spanish, Catalan, and Portuguese (see Gutiérrez-Rexach 2008 for Spanish, Ambar 2000 for European Portuguese, Castroviejo 2006 for Catalan, Portner & Zanuttini 2003 for Italian and some Northern Italian dialects):

(1) *Che alto* che *l ze!* (Paduan)
what tall *that* S.CL is
'How tall he is!'

(2) *Qué guapa* que *es!* (Spanish)
what beautiful *that* is
'How beautiful she is!'

Note that non-Romance languages also realize an overt complemen-

tizer in *wh*-exclamatives (see Roussou 1992, 2000; Rett 2008; Artiagoitia & Elordieta 2011):

(3) *Ti orea* pu *ine i Maria!* (Greek)
what nice *that* is the Maria
'How nice Maria is!' (Roussou 1992: 124)

(4) *Zein liburu polita irakurtzen ari zar*-en*!* (Basque)
which book beautiful read.PRS now you-*that*
'What a beautiful book you are reading!'

According to Portner & Zanuttini (2003) (henceforth P&Z), the complementizer *che* in (1) introduces a complement clause or phrase (CP) that is only present in exclamatives, not in questions. This CP is specified for factivity: "Moreover, we argue that factivity is represented in the CP domain, more specifically in a layer of CP structure not present in interrogatives." (P&Z 2003: 59). This factive CP represents an additional layer that does not exist in interrogatives: "it is possible to suggest that factivity of exclamatives is syntactically encoded by the presence of the extra CP layer." (P&Z 2003: 62).

The authors derive the factivity status of *wh*-exclamatives from two factors (P&Z 2003: 46). First, exclamatives can only be embedded under factive predicates:[1]

(5) *Mary knows/*thinks/*wonders how very cute he is.*

Second, when exclamatives are embedded under a factive verb such as *know* or *realize*, in the present tense and with a first person subject, this verb cannot be negated:

(6) **I don't know/realize how very cute he is.*

They explain the ungrammaticality in (6) by the conflict between denying the speaker's knowledge and the factive presupposition generated by the exclamative. Another cue for the factive property of exclamatives is their behavior in a dialogue. *Wh*-exclamatives can never be used as questions, and they never induce a response from the interlocutor:

(7) a. A: *How tall is Mary?* B: *1.80.*

b. A: *How tall Mary is!* B: *#1.80.*

According to P&Z (2003), the data in (7) can be explained straightforwardly by the assumption that *wh*-exclamatives already presuppose the

answer. Presuppositions are defined within Stalnaker's (1973) common ground (CG): "the set of propositions mutually held as true, for purposes of the conversation, by the participants in a conversation at a given time" (P&Z 2003: 51). According to this definition, the proposition that *Mary is 1.80 tall* is held as true in (7).[2]

Despite these arguments, other linguists have argued against the hypothesis proposed by P&Z (2003) that the complementizer *che* introduces a clause that is linked to the factivity of *wh*-exclamatives (see Gutiérrez-Rexach 2008, Parry 2003, Castroviejo 2006, Rett 2008, Demonte & Fernández-Soriano 2009). According to their proposals, the complementizer *che* does not introduce a clause that is only common to *wh*-exclamatives (see P&Z 2003), but rather *che* represents a complementizer that we find in other constructions as well (e.g. relative clauses; see Parry 2003). In what follows, new data from Sardinian and non-Romance languages (e.g. Basque) will be presented that support the latter analysis and show that the complementizer realized in exclamatives is morphologically distinct from complementizers that are used in complement clauses under factive predicates (see section 2). The data presented in this section will show that *wh*-exclamatives show a peculiar behavior that distinguishes them from complements of factive clauses.

After a short revision of the state of the art (see section 3), it will be shown that exclamatives and clefts share important properties (see section 4) which will explain the use of morphologically identical complementizer *chi* in Sardinian and other Romance and non-Romance languages in both constructions. The formalization of the analysis will be presented in section (5) showing common properties of both clefts and *wh*-exclamatives.

2. Data

This section shows that Sardinian as spoken in Baunei (Baunese, henceforth Bn)[3] realizes an overt complementizer *chi* in *wh*-exclamatives and differs morphologically from the complementizer *ca* realized in complements of factive verbs. Instead, *chi* is morphologically identical with the complementizer used in clefts. These data suggest that the similarity between *wh*-exclamatives and clefts should be captured somehow in the analysis.

The following data are from the ASIt[4] questionnaire, collected during fieldwork by Ruju & Vahl (2010) and Mensching (2012b). In the Sardinian variety of Baunei, there are two different complementizers, *ca* and *chi*. The complementizer *ca* is usually used with sentence-embed-

ding predicates such as factive predicates like *to know* or *the fact that* that mark the embedded sentence for factivity (see (8) and (9)) (see also Blasco Ferrer 1986: 195-6, Jones 1993: 247, Mensching 2012a, Bacciu & Mensching 2018):[5]

(8) *Su fattu ca deppet telefonare ist importante.* (Bn)
the fact that must.3SG call is important
'The fact that she must call is important.'
(ASIt questionnaire, Ruju & Vahl 2010, Nr. 203)

(9) *d' iscio ca is morta erisero* (Bn)
it know.1SG that is dead yesterday
'I know that she died yesterday.' (Secci, p.c.)

The following data from Baunei show that a different complementizer is used in *wh*-exclamatives and clefts which has the form *chi* and not *ca* as in factive complements:[6]

(10) *Wh*-exclamatives
a. *Cantus erregallus* chi *t'* *at* *fattu!*
how_many gifts *that* you.OBL have.3SG made
'How many gifts he gave you!' (ASIt questionnaire, Ruju & Vahl 2010, Nr. 217)[7]

b. *Ite oglos* chi *tenet!*
what eyes *that* holds
'What eyes he has!' (Secci 2006: 112)

c. *Battigales dommos* chi *je* *tenet!*
what huge houses *that* there holds
'What huge houses there are!' (Secci 2006: 112)

(11) *Ses tui* chi *mi* *deppes* *contare* *caleguna* *cosa.*
are.2SG you *that* me.OBL must.2SG tell some thing
'It's you that must tell me something.' (ASIt questionnaire, Ruju & Vahl 2010, Nr. 207)

The main observation of the data from Baunei is that exclamatives and clefts share the same complementizer, while complements embedded under factive verbs show a distinct complementizer.[8]

Basque is another language that shows distinct complementizers in exclamatives and factive complement clauses: *en* and *la* (see Artiagoitia & Elordieta 2011). The complementizer *en* that is used in exclamatives in (12) but not in complement clauses selected by lexical verbs like factive verbs (see *la* in (13)). The following data are from a Basque native speaker:

(12) *Zein liburu polita irakurtzen ar zar*-en!
which book beautiful read.PRS now you-*that*
'What a beautiful book you are reading!'

(13) *Arrazoia duzu*-la *uste-dut.*
right.ART.3SG.F have-*that* think-AUX.1SG
'I think/know that you are right.'

Clefts also select the complementizer *en* and not the complementizer *la*:

(14) *Erakunde hori da* [*Oteizak bere obrak*
Institution this is Oteiza.ERG his works
*utzi nahi lizkioke*en*a*].
bequeath want AUX.POT.*that*.ART.3SG.F
'It is to that institution that Oteiza would like to bequeath his works.'
(Hualde & Urbina 2003: 801)

In this paper, however, only Sardinian and not Basque will be considered.

To sum up, it has been shown that there is a clear distinction between complementizers that are used in clefts and exclamatives and lexically selected clauses that refer to actual events, i.e. factive complements.

One possibility to account for the similarity between *wh*-exclamatives and clefts is to assume that *chi* is a *wh*-relative pronoun derived from the Latin *wh*-element QUID (see Blasco Ferrer 1986: 195-196, Bacciu & Mensching 2018: 323 on the origin of *chi* and *ca*). This analysis will be examined in section 4.1 after the discussion of the state of the art in section 3.

In the next section, different accounts of exclamatives are reviewed that might explain the realization of the complementizer *chi* and not *ca* in exclamatives and clefts.

3. Previous accounts

P&Z (2003: 40) assume a more articulated CP domain for the syntactic analysis of *wh*-exclamatives in line with Rizzi (1997). According to the authors, there is an abstract factive operator FACT in the lower CP that types exclamative clauses as factive. The *wh*-phrase is located above the factive clause in the higher CP:

(15) [$_{CP}$ *wh*-phrase [[$_{C}$ Ø [$_{CP}$ FACT C' [$_{C}$] IP]]] (P&Z 2003: 64)

The factive clause can be introduced by an overt complementizer C *che* 'that' in (Northern) Italian (e.g. Paduan) *wh*-exclamatives:

(16) a. *Che alto* che *l ze!*
what tall *that* S.CL is
'How tall he is!'

b. [$_{CP}$ *che alto* [$_{C}$ Ø [$_{CP}$ FACT C' [$_{C}$ *che*] $_{IP}$ *l ze*]]] (P&Z 2003: 64)

P&Z (2003: 40) assume a second CP layer above the factive CP, which avoids the doubly-filled-COMP filter violation (this filter excludes the co-occurrence of a *wh*-phrase and a complementizer in C°). However, this filter does not apply in all languages as has been shown in the literature (see Bayer 1984 for Bavarian, Haegeman 1992 for West Flemish).

Another argument for the assumption that the *wh*-constituent is not a specifier of the complementizer *che* comes from constituents that stay in the position between the *wh*-constituent and the complement clause (cf. also Vai 2000 for the same data from the Northern Italian dialect Milanese):

(17) a. *Che bel libro, a to sorela,* che *i ghe ga regalà!* (P&Z 2003)
Lit. 'What a nice book, to your sister, *that* they gave her as a gift!'

b. *In che bel posto, to fjolo,* che *te lo ga mandà!*
Lit. 'In what a nice place, your son, *that* you sent him!'

The main question is whether it is possible to apply P&Z's account to *wh*-exclamatives in Sardinian and how the distinction between the two complementizers *chi* and *ca* should be explained.

There are some problems with the assumption that the complementizer *chi* in Sardinian exclamative clauses could be analyzed as some marker of factivity. A first argument against the similarity between factive complement clauses and complement clauses in *wh*-exclamatives has to do with the fact that complementizers under factive verbs are not optional in Italian (It.) (see also Giorgi & Pianesi 1997) and Sardinian from Baunei (see (18)):

(18) a. *Mario d' iscit* *(ca) *Paola no is' bella.* (Bn; Secci, p.c.)
Mario it know.3SG (*that*) Paola not is beautiful

b. *Mario sa* *(che) *Paola non è bella.* (It.)
Mario know.3SG (*that*) Paola not is beautiful
'Mario knows that Paola is not beautiful.'

By contrast, *chi* in Baunei, *che* in Italian and *que* in Spanish is optional in *wh*-exclamatives:[9]

(19) *Ite bella* (chi*)* *ses!* (Bn)[10]
what beautiful (*that*) are.2SG
'How beautiful you are!' (Secci, p.c.)

(20) *Qué guapa* (que) *es mi niña!* (Spanish, Sp.)
what beautiful (*that*) is my daughter
'How beautiful my daughter is!'

(21) *Che bella* (che) *è mia figlia!* (It.)
what beautiful (*that*) is my daughter
'How beautiful my daughter is!'

Second, there is a distinction between two different complementizers in exclamatives: the one that follows directly the factive predicate and the one that follows the *wh*-constituent as can be shown by the following embedded *wh*-exclamative in Spanish with two complementizers from Brucart (1993: 95) (but see Castroviejo 2006, P&Z 2003 for the unembeddedness of *wh*-exclamatives):

(22) *Cuando la vio llegar a la fiesta,* (Sp.)
when her saw.3SG arrive at the party
Luis exclamó que *qué guapa que estaba María.*
Luis claim.PST.3SG *that* what pretty that be.3SG.PST.IPFV Maria
'When he saw her arriving at the party, Luis exclaimed how beautiful María looked.'

The example in (22) suggests that the factive operator must be placed higher than previously assumed by P&Z (2003) because the complementizer that introduces factivity must precede and not follow the *wh*-constituent in exclamatives:[11]

(23) *Cuando la vio llegar a la fiesta,* (Sp.)
when her saw.3SG arrive at the party
Luis exclamó [$_{CP}$ FACT C′ [$_{C}$ *que*] [$_{CP}$ *qué guapa* [$_{C}$ *que*]
Luis claim.PST.3SG that what pretty that
estaba María]].
be.3SG.PST.IPFV Maria
'When he saw her arriving at the party, Luis exclaimed how beautiful María looked.'

Given the arguments presented above, it will be argued in this paper that factivity of *wh*-exclamatives is not directly encoded as a FACT operator in the syntax of exclamatives but can be derived semantically from their surprise interpretation (see 4.2). As will be shown in section 4.2 the complementizer *chi* is a finiteness marker which introduces a

sentence interpreted as focus background (see 4.3). The focus approach will be formalized in section 5.

4. Proposal

In this section, it is argued that the Sardinian complementizer *chi* in *wh*-exclamatives is both a marker of finite clauses (cf. also Rizzi 1997 and Paoli 2005) and a marker of background information, which is presupposed in exclamatives (cf. Guitiérrez-Rexach 2008, Abels 2010) and also in clefts. Before presenting the analysis, the hypothesis that *chi* introduces a relative clause in *wh*-exclamatives and clefts is discussed.

4.1. Relative clause analysis

One possibility to account for the distinction between *chi* and *ca* is to assume, as suggested by an anonymous referee, that *chi* in *wh*-exclamatives as well as in clefts is a relative pronoun that introduces a relative clause headed by an elliptical definite description 'the one who…' (see also Kellert 2015 for a discussion of a relative clause analysis of clefts in Standard Italian):[12]

(24) Relative Clause analysis of clefts and *wh*-exclamatives in Baunei

a. *Ses* *tui* *(su)* chi *mi* *deppes* *contare* *caleguna* *cosa.*
are.2SG you (3SG.M) *that* me.OBL must.2SG tell some thing
'It's you (the one) who must tell me something.'
(ASIt questionnaire, Ruju & Vahl 2010, Nr. 207, my brackets and translation)

b. *Ite* *bella* *(est* *su)* chi *ses!*
what beautiful.SG.F (is 3SG.M) *that* are.2SG
'How beautiful (is the person who) you are!

Under this analysis, the sentence in (17a) (repeated here in (25a)) might be analyzed as a case of topicalization in (25b). The complementizer clause is analyzed as a relative clause headed by an elliptical DP corresponding to a definite description:

(25) a. *Che bel libro, a to sorela,* che *i ghe ga regalà!* (P&Z 2003)
Lit. 'What a nice book, to your sister, *that* they gave her as a gift!'

b. *Che* *bel* *libro,* *a* *to* *sorela,* *(xe* *quelo)* che *i* *ghe* *ga* *regalà!*
what nice book, to your sister, is the_one *that* S.CL.3PL her have.3 given!'
Lit. 'What a nice book, to your sister, (is the one that) they gave her as a gift!'

However, the main problem with the relative clause analysis is that

this analysis cannot explain the agreement between the pronoun outside the relative clause and the embedded verb (*tu su chi … deppes* in (24a) and *pro.*2SG *su chi ses* in (24b)). The agreement facts have been interpreted as one of the main arguments for a monoclausal analysis of clefts in the literature (see Kellert 2015 and references therein). The cleft in (24a) corresponds thus to a monoclausal sentence in (26) without a relative clause with the focus on the personal pronoun *tu* which agrees with the finite verb *deppes*:

(26) *tu*$_{\text{Focus}}$ *mi* *deppes* *contare* *caleguna* *cosa.*
you me.OBL must.2SG tell some thing
'You must tell me something.'

Another argument against the relative clause analysis of *wh*-exclamatives is that exclamatives are propositions and not relative clauses (see P&Z 2003). I will thus suggest a different analysis in section 4.2 which accounts for the agreement of clefts and exclamatives and their monoclausal property.

4.2. Finiteness

The following data from Italian and Baunese show that the verb in *wh*-exclamatives is specified for finite verbs (27a-b), in contrast to questions in (28a-b):[13]

(27) a. **Che* *regole* *stupide* *seguire*! (It.)
what rules stupid follow

b. **Te* *regolas* *tontas* *castiare* (Bn)
what rules stupid follow (Secci, p.c.)

(28) a. *Quali* *regole* *seguire* *per* *fare* *del* *sole* *un* *amico?* (It.)
which rules follow to make of.the sun a friend
'Which rules should we follow to make the sun our friend?'
[C-ORAL-ROM imedsc03]

b. *eccale regolas (si deppent) castiare po fare su sole ammigu?* (Bn)
'Which rules should we follow to make the sun our friend?' (Secci, p.c.)

The finiteness can be represented in line with Rizzi (1997) by a FinP in (29). It makes sense to assume that the complementizer *chi* in Sardinian is the head of a Fin° specified for finite clauses (see Demonte & Fernández-Soriano 2009 for a similar analysis in Spanish). Because the complementizer is optional in exclamatives, Fin° can contain a zero morpheme in (29):

(29) a. [$_{XP}$ *wh*-NP [$_{FinP\ Fin^{\circ}}$ (*chi/Ø*).....]]!

b. [$_{XP}$ *Eccantus* *erregallus* [$_{FinP\ Fin^{\circ}}$ (*chi/Ø*) [*pro* *t'* *at* *fattu*]]*!* (Bn)
how_many presents that *pro*.3SG you.OBL has made
'How many presents he has given to you!'

c. [$_{XP}$ *Ite* *bella* [$_{FinP\ Fin}$ (*chi/Ø*) [$_{TP}$ *pro* *ses*]]]*!* (Bn)
what beautiful (that) *pro*.2SG are.2SG
'How beautiful you are!

The analysis in (29) accounts for the monoclausal property of exclamatives, i.e. for their propositional property (see also P&Z 2003) and the agreement between the covert subject pronoun and the finite verb *ses* (see 4.1 on agreement).

The surprise interpretation of *wh*-exclamatives is encoded by an Excl(amative) operator. The exclamative operator EXCL is defined in line with Sharvit's (2002) definition of surprise-predicates within the question semantics of Hamblin (1973) and Karttunen (1977) (henceforth H&K). EXCL or surprise-predicates take a world variable (w), H&K's question intention (Q), and a speaker (a) as their arguments. The truth conditional semantic denotation of EXCL or surprise-predicates is as follows: EXCL/surprise-predicates denote the complement set of the set of worlds compatible with a's expectations (see Sharvit 2002: 103). In other words, surprise predicates denote a set of propositions that are unexpected by the speaker:

(30) $\| \text{surprise}_{H\&K} \|$ (w)(Q)(a) = 1 iff NONEXP(a)(w) $\supseteq \cap$\{p: p $\in$ Q(w) and w $\in$ p\}

If the definition in (30) is applied to the example in (31), it says that any possible true proposition of the set of H&K's question denotation, e.g. he gave you 100 gifts, is unexpected by the speaker a:[14]

(31) *Eccantus* *erregallus* *chi* *t'* *at* *fattu!*
how_many presents that you.OBL have.3SG made
'How many presents he has given to you!' (Secci, p.c.)

The exclamative operator should be located in Force°, which is exactly the position for sentence type features according to Rizzi (1997) (cf. Gutiérrez-Rexach 2008 for a similar proposal):

(32) [$_{CP}$ EXCL [$_{FocP}$ *Eccantus erregallus* [$_{FinP}$ [$_{Fin^{\circ}}$ *chi*] [$_{IP}$ *t'at fattu*]]]][15]

One empirical argument that the exclamative operator is higher than the lower complementizer *chi* is shown in the next Spanish example

(repeated here from section 3 in (23)). The higher complementizer *que* is licensed by the exclamative predicate *exclamó*. The exclamative operator is thus higher than the lower complementizer *que* as the following data from Brucart (1993: 95) show:

(33) *Cuando la vio llegar a la fiesta,* (Sp.)
when her saw.3SG arrive at the party
Luis exclamó que *qué guapa* que *estaba María.*
Luis claim.PST.3SG *that* what pretty *that* be.3SG.PST.IPFV Maria
'When he saw her arrive at the party, Luis exclaimed how beautiful María looked.'

According to my analysis, factivity follows directly from the notion of surprise because the latter presupposes the truth of the proposition towards which the speaker is surprised.

To sum up: It has been argued that factivity is encoded as an exclamative operator in the highest CP in the syntax of exclamatives. The next section discusses the information structure of *wh*-exclamatives, which, as we will see, plays an important role for the complementizer analysis in exclamatives and cleft(like) constructions in Sardinian and Italian and for the use of one and the same complementizer in both constructions in Sardinian.

4.3. Information structure

The next property of the complementizer *chi* is that it marks the boundary between the focused constituent realized by the *wh*-constituent in exclamatives and the background material realized by the finite clause introduces by *chi*. Semantically speaking, the focused constituent introduces alternatives that are triggered by the *wh*-item (*eccantus erregallus*), and the background clause is associated with an existential presupposition (e.g. *he has given some quantity of presents to you* in (34)) (see also P&Z 2003):[16]

(34) [$_{CP}$ EXCL [$_{FocP}$ *Eccantus erregallus* [$_{FinP}$ [$_{Fin^{\circ}}$ *chi*] $_{IP}$ *t'at fattu*]]] (Bn)
'How many presents he has given to you!'

The following additional data from Italian supports the information structural approach of *wh*-exclamatives in Italian and Sardinian from Baunei. The focus semantics is expressed by the intonation. The *wh*-constituent in exclamatives in (35) is phonologically accentuated, whereas the background material realized by the complement clause is deaccentuated (see Kellert 2011):[17]

(35) *Che mani grandi (che hai)!* [C-ORAL-ROM ifamn25]
what hands big that have.2SG
'What big hands you have!'
[Focus] [Background] Information structure

The following example in (36) reveals that the background material can be expressed through a pronoun that refers to a previously mentioned statement and cannot contain a new focus element, as can be shown by example (37) (see also Merchant 2001):

(36) *Il ministro è euforico, eccome se lo è!*
the minister is enthusiastic and_how if it.OBL is
'The minister is enthusiastic and how!'

(37) **Il ministro è euforico, eccome è euforico il ministro*$_{Focus}$*!*
Lit. 'The minister is enthusiastic and how enthusiastic the minister$_{Focus}$ is!'

This restriction holds for any focused element that is inside the background material of *wh*-exclamatives, e.g. a second *wh*-constituent as in (38) (see Radford 1989, P&Z 2003 for the observation that multiple *wh*-constituents are not possible in English exclamatives and Kellert 2015 for the same restriction in Romance):

(38) *Che donna che ha sposato Mario/*che uomo!*
what woman that has married Mario/*what man
intended: 'What a woman has married what a man!'

(39) a. *Chi assomiglia a chi?*
'Who looks like who?'

b. **Chi è che assomiglia a chi?*[18]
who is that looks_like to who

One major advantage of the information structural approach of *wh*-exclamatives is that *wh*-exclamatives and cleft constructions can be analyzed in a uniform way because they both realize the same partition in focus and presupposed background (see Frascarelli & Ramaglia 2009 for an information structural analysis of clefts, among others). Remember that section 2 revealed that the same complementizer is used in clefts and *wh*-exclamatives in Baunese (*chi*) and Basque (*en*).

Note that clefts can be embedded under non-factive predicates or operators, and still the complementizer *che* is used. The complementizer *che* cannot be analyzed as a marker of factivity in clefts:

(40) *Non so se era lei che teneva la porta o lui.* (It.)
not know.1SG if was she *that* held.3SG the door or he
'I don't know if it was her who held the door or him.'

The same argument applies to cleft(like) interrogatives in Northern Italian dialects (Parry 2003, Poletto & Vanelli 1995), which can realize an overt complementizer[19]:

(41) *Cossa* che *i te ga mandà?* (Paduan)
what *that* he you has sent
'What is it that he has sent to you?'

The cleft question in (40) and the *wh*-question with an overt complementizer in (41) show the same partition in focus and presupposed background (see also Boeckx *et al.* 2001 on cleft *wh*-questions).[20] The same partition of information structure and the presupposition of the focus background are present in *wh*-exclamatives in (35). This common property is responsible for the use of the complementizer *chi* in Sardinian clefts and exclamatives.[21]

Moreover, the optionality of the complementizer *che* in *wh*-exclamatives (see (19) and (21)) and in reduced cleft interrogatives such as in (41) is better explained under the analysis according to which *chi* is represented as Fin° (see 4.2) and has an information structural function (see 4.3), than under the relative clause analysis in 4.1. If the complementizer It. *che* or Bn *chi* is just a morpheme that marks the boundary between focused and background material of the clause, as is assumed in this section, it does not contain any propositional semantic features that are important for the semantic interpretation of the clause. In this sense, the complementizer *che* in *wh*-exclamatives is comparable with other elements that do not contribute to the proposition of the clause, like modal or discourse particles, expressives, etc. that can be omitted from the clause (cf. Coniglio 2008, Potts 2008, among others):

(42) *What* the hell *are you doing?*

(43) *That* bastard *Trump has no right to comment on a woman's appearance.*

The factitivity approach has problems explaining the optionality of the complementizer *che*, because complementizers in factive clauses are usually not optional (see section 2, (18a-b)). The same problem holds for the relative clause analysis.

To sum up, it has been argued that the complementizer *che* in Italian exclamatives and *chi* in Sardinian exclamatives must be analyzed as a

marker of finite clauses that correspond to background material. The suggested analysis of *wh*-exclamatives in Sardinian spoken in Baunei supports the approach of Spanish *wh*-exclamatives in terms of information structure proposed by Gutiérrez-Rexach (2008) and Demonte & Fernández-Soriano (2009). The informational structural analysis was upheld by means of intonation and some additional data such as absence of a secondary focus in the background material.

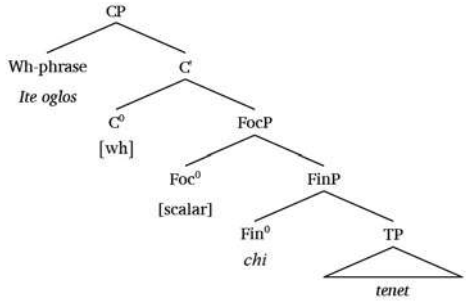

Figure 1. Syntax of *wh*-exclamatives

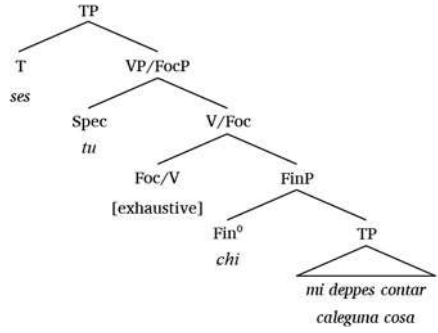

Figure 2. Syntax of clefts

5. Unified account of wh*-exclamatives and clefts*

In this section, a unified account of *wh*-exclamatives and clefts will be offered that will explain the common property of these constructions.

Clefts and exclamatives are focus constructions that trigger alternatives which are evaluated by an exhaustive operator in the case of clefts and by a scalar focus operator in the case of exclamatives. They both share a similar focus structure, where the sentence is devided into

a finite clause introduced by *chi* and a focus phrase expressed by a *wh*-phrase in case of exclamatives or a copula clause in case of clefts (see Figure 1 and 2).

The next section investigates the focus property of these constructions in more detail.

5.1. Clefts express exhaustive focus

Clefts express exhaustivity, i.e. the focus realized inside the cleft is the only true alternative, all other alternatives are negated (Büring & Križ 2013, among others):

(44) *ses tu*$_{\text{Focus}}$ *chi deppes contar caleguna cosa.*
'It's you who has to say something.'
(Exhaustivity: 'Nobody else than you.')

Exhaustivity is expressed as following. The predicate P applies to x and only to x:

(45) $\forall x \forall y\ (P)(x) \wedge (P)(y) \rightarrow x = y$
'For every x and every y: if the predicate P applies to x and y, then x is identical with y.

According to Büring & Križ (2013), the exhaustivity in clefts is presupposed and not asserted as in sentences with *only*:

(46) a. *It was Fred she invited.* Presupposition: 'She invited no one else.'

b. *She only invited Fred.* Assertion: 'She invited no one else.'

Büring & Križ (2013) explain that, as exhaustivity cannot be negated, it must be presupposed:

(47) a. #She invited Fred, but it wasn't Fred she invited.

b. She invited Fred, but she didn't invite only Fred.

It is therefore assumed that clefts express only presupposed exhaustivity, and not asserted one. Applying the presupposed exhaustivity to the example in (44), it says that nobody else must tell something:

(48) *Ses tu chi deppes contar caleguna cosa.* (Bn)
Assertion: 'You must tell something.'
Presupposition: 'Nobody else must tell something.'

As the exhaustivity in clefts is only presupposed and not asserted,

it is possible to find an overt adverb *only* in clefts in Sardinian which asserts exhaustivity:

(49) a. Ses solu tui chi deppes allegáre caleguna cosa. (Bn)

b. Ses fetti tui chi deppis contai calencuna cosa. (Sardinian spoken in Tertenia)

c. Assertion in a.-b.: 'Noone else must tell something.'

The prediction is that the negation should have scope over the assertion in (50a) and (50b) which is indeed the case as the interpretation in (50c) shows:

(50) a. No ses solu tui chi deppes allegáre caleguna cosa. (Bn)

b. No ses fetti tui chi deppis contai calencuna cosa. (Sardinian spoken in Tertenia)

c. Assertion in a.-b.: 'It's not the case that noone else must tell something.' → 'Someone else must tell something.'

5.2. Wh-*exclamatives express scalar focus*

It is assumed that *wh*-exclamatives denote semantically an alternative set of propositions similar to *wh*-interrogatives (see P&Z 2003):

(51) *ite oglos chi tenet!*
'What eyes you have!'
λ p$\exists$x [type (w)(x)& *eyes* (w)(x) & p(w) & p = λ w' [*you have* x in w']]
{you have eyes of type x, you have eyes of type y, …}

The difference between *wh*-interrogatives and *wh*-exclamatives is that *wh*-exclamatives, but not necessarily interrogatives, express an ordered set of alternatives, i.e. alternatives are ranked according to some scale of surprise. This ordering of alternatives is called 'scalar focus' (see Kellert 2015). In (51), the speaker is surprised about the type of eyes the addressee has. He would be less surprised if she had different type of eyes, for example eyes that everyone has. Indeed, *wh*-exclamatives can be embedded under surprise predicates and interjections such as: *Wow! Imagine!*

The scalar focus can be coded by the scalar feature [scalar] placed in Foc°:

(52) $\| \text{Foc°[scalar]} \| = \forall q\, [C(q) \,\&\, q \neq p \rightarrow (q) > \text{likelihood}\ (p)]$
'For all propositions q, if q is not identical with p, then q is more likely than q.'

If the focus denotation in (52) is applied to the example in (51), the result is that the focus alternative (i.e. her having the type of eyes she has) is less likely or expected than her having every other type of eyes.

To sum up: it has been shown that exclamatives and clefts express focus and the complementizer *chi* marks finiteness in these focus constructions.

6. Summary and outlook

Based on Sardinian and Italian data of exclamatives and clefts, it has been argued against the idea that the complement clause introduced by the complementizer *che* in exclamatives represents an additional layer in the structure that is only common to *wh*-exclamatives (cf. Portner & Zanuttini 2003). Evidence has been shown against encoding factivity in the lowest CP structure of exclamatives (cf. Portner & Zanuttini 2003). Instead, it has been suggested to derive factivity semantically from the expression of surprise (see Guitiérrez-Rexach 2008) and to analyze the complementizer *che* in Italian and *chi* in Sardinian as a marker of finiteness (see Demonte & Fernández-Soriano 2009) which also plays an information structural role, i.e. it draws the boundary between focused and presupposed background material in *wh*-exclamatives and clefts (see Guitiérrez-Rexach 2008). Clefts express exhaustive focus and exclamatives imply scalar focus.

The use of morphologically identical complementizer *chi* in clefts, exclamatives and relative clauses is striking and might suggest looking into the possibility of some unified analysis more closely. As discussed in 4.1, one possibility could be to analyze *chi* as a relative pronoun which would explain its distribution in *wh*-exclamatives, clefts and relative clauses. In order to test this possiblity, one could look into *wh*-exclamatives in old Sardinian, which made a distinction between relative pronouns, e.g. accusative *chen* or a relative pronoun with prepositions oblique case: *a chen, cun chen* derived from Latin QUEM. If the relative clause analysis is on the right track, we should find different relative pronouns in *wh*-exclamatives depending on the syntactic function of the *wh*-phrase.

Another issue that needs to be studied in future research is the distribution of *chi/ca* in other Sardinian dialects. It seems that there is a lot of variation, as an anonymous reviewer has pointed out. Several of the speakers from the nearby Dorgali the reviewer contacted said that they use *ca* after verbs like *dire* or *sapere (e.g. naro ca, isco ca*) and *chi* after verbs such as *pensare, volere, meravigliarsi: pesso chi, cherzo chi, m'ispantat chi*. One speaker claims that both *ca* and *chi* can be used with verbs like *m'ispantat*: *m'ispantat chi* 'mi meraviglia il fatto che', *m'ispantat ca* 'sono/ resto meravigliato a causa del fatto che'. The reviewer concludes that *chi* in Campidanese is slowly but surely replacing *ca*. It would be interesting to see in future research which complementizer the speakers from Dorgali use in exclamatives, clefts and relative clauses.[22]

Abbreviations

a	=	speaker (variable)
ART	=	article
ASIt	=	Atlante Sintattico d'Italia
AUX	=	auxiliary
Bn	=	Baunese
C	=	context
CG	=	Common Ground
CL	=	clitic
C-ORAL-ROM	=	Cresti & Moneglia (2005)
CP	=	Complementizer Phrase
Deg	=	degree
ERG	=	ergative
Exc	=	exclamative
F	=	feminine
EXCL	=	exclamative operator
FACT	=	factive operator
FinP	=	Finite Phrase
FocP	=	Focus Phrase
IPFV	=	imperfective
It.	=	Italian
H&K	=	Hamblin (1973) and Karttunen (1977)
M	=	masculine
NONEXP	=	not expected
OBL	=	oblique case
P	=	predicate
PL	=	plural
POT	=	potential mood
PRS	=	present tense
PST	=	past tense
P&Z	=	Portner & Zanuttini (2003)
p.c.	=	personal communication
p, q	=	proposition(s)
Q	=	question intention
s	=	subject
SG	=	singular
Sp.	=	Spanish
TP/IP	=	Temporal/Inflectional Phrase
w	=	world variable

Notes

[1] Surprise predicates are also considered to be factive predicates in the literature because they presuppose the truth of the proposition of the complement clause they embed: i. Mary is surprised how many people John invited. (→ it is true that John invited x-many people) (see Sharvit 2002).

[2] There is a controversial discussion in the literature as to what exactly *wh*-exclamatives presuppose (cf. Castroviejo 2006, Potts 2008, Abels 2010, to name a few). It seems to me that the speaker must not know exactly how tall Mary is in order to utter (7b) felicitously.

[3] In future research, further dialects of Sardinian will be studied and how they behave with respect to exclamatives and clefts.

[4] A short form for *Atlante Sintattico d'Italia* <http://asit.maldura.unipd.it>.

[5] There is a widespread use of *ca* in reason clauses as well which appears to be common to many Sardinian varieties. The complementizer *ca* is optionally preceded by *proite* 'why' there (lit. 'for what'):

(i) *Semus ghiratos (proite) ca fit tardu*
'we returned because it was late' (Blasco Ferrer 1986: 200, Jones 1993: 249)

(ii) *non't' appo muttiu poitta ca no nde tenío gana*
not you have.1SG called because that not of.it have.1SG.PST.IPFV desire
'I did not call you, because I did not want to' (Bn; Secci, p.c.)

As reason clauses are not embedded sentences, they are not presented here. However, it could be argued that reason clauses are linked to factivity and thus trigger the use of *ca* and not *chi* (i.e. the example in (i) presupposes the truth of the proposition introduced by the reason clause *it was late*).

[6] Note also that *chi* can also be used in relative clauses, with complements in subjunctive mood, etc. (cf. Rohlfs 1969, Blasco Ferrer 1986: 195-6, Jones 1993: 247). The investigation of the common properties between these constructions and exclamatives is left for future research.

[7] Note that the complementizer *chi* is optional in *wh*-exclamatives in Baunese:

(i) *Cantus attras bìas si-dd'appo giai narau occannu!*
how_many other times REFL-it.have.1SG already told this.year
'How many times I have already told him it this year!' (Secci 2006: 2012)

[8] It should be noted however that in Campidanese *chi* tends to replace *ca* (*sciu chi* … 'I know that'; *est beru chi*… 'It's true that…').

[9] According to P&Z (2003: 67-8), the presence of *che* in Standard Italian is conditioned by the E-only property of the *wh*-expression (i.e. *wh*-expressions which can only be used in exclamatives). *Wh*-exclamatives that can be used as *wh*-interrogatives do not realize the complementizer *che* in Standard Italian:

(i) *Quanti pesci hai mangiato?/!*
how_many fishes have.2SG eaten
'How many fishes have you eaten?' or 'How many fishes you have eaten!'

Although this observation is correct, the main point in the discussion of the examples in (19-21) is the possibility to omit the complementizer *che* or *que* in E-only exclamatives which is not given in complements of factive predicates.

[10] Note that the omission of the complementizer *chi* is not possible in nominal exclamatives:

(i) *Arraccia (d)e ogus* (*chi) *portat!* (Sardinian spoken in Tertenia)
race of eyes *that* wears
'What type of eyes (s)he has!'

(ii) *Is arregalus* (*chi) *t'* *at* *fattu* (Sardinian spoken in Tertenia)
the gifts *that* you.OBL have.3SG made
'What gifts you got!'

[11] I disagree with the suggestion by an anonymous reviewer that the higher complementizer *que* could be analyzed as a declarative complementizer that introduces

direct speech, i.e. *Luis exclamó que* "*qué guapa que estaba María*". This is not supported by sequence of time in (23). If the embedded exclamative were direct speech, the verb *estar* would match the time of Maria's arrival at the party which corresponds to the speech time of Luis' exclamation. However, the past tense morphology of *estar* shows that the time of Luis exclamation and the speech time of the utterance are not identical in (23).

[12] I thank an anonymous reviewer for providing the examples in (24).

[13] Note that *wh*-exclamatives allow infinitival relative clauses like (i):

(i) *Che regole stupide da seguire!* (It.)
what rules stupid to follow
'What stupid rules we must follow!'

(ii) *Te regolas tontas de castiare* (Bn)
'What stupid rules to look at!' (Secci, p.c.)

I assume that these exclamatives contain an elliptical copula (represented in brackets) that is not infinitival and thus do not contain a deontic modal verb in the matrix clause (see iii):

(iii) *Che regole stupide (ci sono) da seguire!* (It.)
what rules stupid there are to follow
'What stupid rules there are that we must follow!'.

[14] The assumption that *wh*-exclamatives encode surprise of the speaker is still under debate (see P&Z 2003) as the following example shows: 'How beautiful you are! Exactly as I expected!'. I agree that the surprise interpretation is probably not always part of the meaning of exclamatives. However, I do think that the speaker must have some attitude towards the proposition expressed by an exclamative as the following example shows: 'How beautiful you are! # Although, I don't care about your beauty at all!' The exact definition of speaker's possible attitudes is left for future research.

[15] Gutiérrez-Rexach (2008) assumes that *qué* separates from the NP and moves to ForceP to check the exclamative feature:

(i) $[_{\text{Force/Exc}}$ *qué*$_j$ $[_{\text{Focus/Deg}}$ $[t_j$ *libros*$]_k$ $[_{\text{Topic}}$ *que has leído* $t_k]]]$!
what books that have.2SG read
'What books you have read!' (Gutiérrez-Rexach 2008: 129; our analysis)

However, this kind of movement is problematic because such a separation is not attested empirically.

[16] The precise semantics of *wh*-exclamatives (e.g. the scalar implicature or scalar presupposition) is not relevant here (see P&Z 2003 for this point).

[17] There are some Romance languages (e.g., Spanish) that do not realize a complete deaccentuation of the postfocal material, but the postfocal material is still different from the focal one (see D'Imperio 2002).

[18] The same restriction can be observed in other Italian dialects:

(i) a. **Chi xe che gà magnà còsa?* (2 speakers from Veneto)
who is that has eaten what
b. *Chi gà magnà/comprà còsa?*
'Who has eaten/bought what?' (<http://www.raixevenete.com>, last accessed June 4th 2010).

[19] Note that if the complementizer *che* is not realized in interrogatives, clitic verb inversion is used instead as shown in (i a) (see Poletto & Vanelli 1995):

(i) a. *Olà esto pa zit?* (Fassano di Pera di Fassa)
where are.2SG CL gone?
'Where did you go?'
b. *Olà che tu es zit?*
where that you.SG are.2SG gone?
'Where did you go?'

I analyze (i b) with the complementizer *che* as a reduced cleft which consists of a focus phrase and a finite clause:

(i) b'. $[_{\text{FocP}}$ *Olà* $[_{\text{FinP}}$ *che tu es zit*$]]$?
where that you.SG are.2SG gone?
'Where did you go?'

[20] One critical point according to a reviewer was that an important property of clefts, which distinguishes them from exclamatives, is that they contain a higher copular clause which is not presupposed. This critical point might be true for clefts, but not for interrogatives with a complementizer where no overt copula clause is present, as in (41).

[21] One theoretical problem with P&Z's analysis in (i) is related to factive operators:

(i) [$_{CP}$ *che alto*$_j$ [$_C$ Ø [$_{CP}$ FACT C' [$_C$ *che*] [$_{IP}$ l *ze* t_j]]]] (P&Z 2003: 64)

Factive operators usually induce island effects, i.e. the *wh*-constituent cannot move from the factive clause to a position outside the factive clause, as shown in (ii) (cf. Rooryck 1992, Fitzpatrick 2005, de Cuba 2006):

(ii) **Wh*-element$_j$ …[…Factive Operator/factive predicate… t_j] ?
  a. **How*$_j$ *do you regret that you behaved* t$_j$?
  b. *How*$_j$ *do you think that you behaved* t$_j$? (de Cuba 2006: 123)

However, this dependency is not blocked in P&Z's analysis of *wh*-exclamatives in (i). The analysis suggested in this paper does not encounter the problem of intervention effects because EXCL is encoded syntactically higher in the clause than the FACT operator in the lower CP suggested by P&Z's (2003) account:

(iii) [$_{CP}$ EXCL [$_{FocP}$ *Eccantus erregallus* [$_{FinP}$ [$_{Fin^0}$ *chi*] $_{IP}$ *t'at fattu*]]] (Bn; our analysis)
  'How many presents he has given to you!'

[22] According to an anonymous reviewer the Dorgali speakers use *chi* in all of these sentence structures. It seems that the analysis suggested in this paper can also be applied to Dorgali Sardinian. This should be tested systematically in future research.

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