

Wh-Exclamatives, Factivity, and Topicalization Revisited *

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Abstract

Portner and Zanuttini (2000) and Zanuttini and Portner (2000, 2003) suggest that wh-exclamatives have two syntactic components, a wh-operator-variable configuration and a factive operator. This paper shows that Negative Exclamatives (NEs) allows topicalization, but Root Exclamatives (REs) and Embedded Exclamatives (EEs) do not. Our claim is twofold. First, all wh-exclamatives involve multiple CP projections. Second, the impossibility of topicalization in REs and EEs is due to a locality restriction imposed on a wh-operator and a factive operator; on the other hand, the same locality restriction is irrelevant to NEs, and hence topicalization is possible. Examining some important insights of previous studies on wh-exclamatives, we also show that the proposed analysis is compatible with them.

Keywords: complementation, factive operator, negation, topicalization, wh-exclamatives

1. Introduction

This paper is concerned with the analysis of exclamatives like the ones shown below:¹

- (1) a. What a beautiful girl Mary is!
b. How beautiful Mary is!

The sentences in (1) involve the Exclamative-wh/-how-operators (henceforth, E-wh/-how operators), *what a beautiful girl* and *how beautiful*. In (1a), the wh-

word modifies the NP, but in (1b), the how-word the predicate. The two sentences will be used with a feeling of surprise when one meets an extremely beautiful girl. In this paper, we refer to exclamative sentences like (1a, b) which involve E-wh/-how-operators as “wh-exclamatives”.

One of the well-known facts concerning English wh-exclamatives is that they do not tolerate negation (N. McCawley (1973), Imai and Nakajima (1978)). In most cases, wh-exclamatives are indeed incompatible with negation, as we see from the following examples:

- (2) a.* How brilliant a woman Joan isn't! (Imai and Nakajima 1978: 203)
b.* How fast the car doesn't run! (ibid.)
c.* What a smart dog Spot isn't! (ibid.)
d.* What a poem Jim doesn't write! (ibid.)

In (2), the negation occurs in the wh-exclamatives, and none of the sentences are grammatical. In some cases, however, wh-exclamatives co-occur with negation. Let us consider the following example:

- (3) What a lot of them I didn't have time to read! (Huddleston 1993: 262)

In (3), the negation occurs within the wh-exclamative, but the sentence is grammatical. Huddleston (1993) provides some data like (3) as evidence against the generalization that wh-exclamatives do not tolerate negation. A close look at sentence (3), however, shows that the E-wh-phrase involves the quantificational expression *a lot of*, and with a feeling of surprise, it chiefly emphasizes the number of books which the speaker had no time to read. Thus, in wh-exclamatives, negation goes well with a limited set of E-wh-operators that refer to the number of people, things, etc., which we call “quantificational E-wh-operators”.

As shown by the contrast between (2) and (3), there seems to be at least

two types of wh-exclamatives in English: one which does not allow negation, and the other which does. In this paper, we call the latter type “Negative Exclamatives (NEs)”, and compare them with Root Exclamatives (REs) and Embedded Exclamatives (EEs), which are exemplified below:²

- (4) a. How very cute the baby is! [RE]
 b. It is amazing how very cute the baby is! [EE]
- (5) a.* Who/what/what book she saw! [RE]
 (Zanuttini and Portner 2003: 73)
 b. It’s amazing who/what/what book she saw! [EE] (ibid.: 74)

(4a) is an RE sentence, and, as shown in (4b), the factive verb can take the wh-exclamative as its complement. The contrast in (5) suggests that some wh-words like *who*, *what*, and *what book* are unable to occur in REs, though they may occur in EEs (See 2.1.2 for more details.). Thus, REs and EEs are clearly distinguished from each other. Through the comparison between the three types of wh-exclamatives in terms of topicalization, we will identify the following syntactic properties:

- (6) a. REs and EEs do not allow topicalization.
 b. NEs allow topicalization.

After reviewing some advantages of previous research on wh-exclamatives, we will make the following proposals on the basis of the cartographic framework developed by Rizzi (1997, 2004, 2009), Rizzi and Shlonsky (2006, 2007), and Cinque (1999):³

- (7) [1] All wh-exclamatives are derived by exclamatory movement.
 [2] All wh-exclamatives contain a wh-operator-variable configuration and a factive operator.

[3] There is a locality restriction imposed on an E-wh-phrase and a factive operator in REs and EEs, and hence no additional topic occurs between them. The same locality restriction does not apply to NEs, which allow topicalization.

This paper is organized as follows. In Section 2, we will see some syntactic/semantic characteristics of English wh-exclamatives. Section 3 briefly reviews some previous analyses of English wh-exclamatives. In Section 4, we will propose a cartographic analysis for them, and attempt to structurally account for the data given in Section 2. Section 5 draws conclusions.

2. Syntactic/Semantic Characteristics of Wh-exclamatives

2.1 Some Syntactic Data

2.1.1 Movement

In English, both wh-interrogatives and wh-exclamatives obligatorily undergo wh-movement. Look at the following examples:

- (8) a. *Which guy_i* did you dance with *t_i* at the party? (Ono and Fujii 2006: 163)
b. *You danced *with which guy* at the party.[under non-echo interpretation] (ibid.)
- (9) a. *What a strange guy_i* you danced with *t_i* at the party! (ibid.)
b. *You danced *with what a strange guy* at the party! (ibid.)

The contrast in (8) shows that a wh-phrase must move into the CP domain in the derivation of wh-interrogatives. As shown by the contrast in (9), the E-wh-phrase also obligatorily moves into the CP domain. Next, both wh-interrogatives and wh-exclamatives obey island constraints like the Complex NP Constraint (CNPC). Look at the following examples:

- (10) a. **Who_i* did Mary kiss the boy who met *t_i* last night?

- b.**Who_i* did Mary believe the claim that you met *t_i* last night?
 (11) a.**How brave_i* I know a boy who is *t_i*! (Ono and Fujii 2006: 163)
 b.**How brave_i* they must believe the claim that you are *t_i*! (ibid.: 164)

The wh-interrogatives in (10a, b) show that the wh-phrase cannot be extracted out of the CNPC island. The same is true for the wh-exclamatives in (11a, b). The facts shown above suggest that both wh-interrogatives and wh-exclamatives are derived by wh-movement.

However, these two constructions behave differently with regard to Subject-Auxiliary-Inversion (SAI) and Negative Polarity Item (NPI) licensing. Let us look at the following examples:

- (12) a.**Who_i* she saw *t_i*? (Ono and Fujii 2006: 164)
 b. *Who_i* did she see *t_i*? (ibid.)
 (13) a. *What a big house_i* he lives in *t_i*! (Ono and Fujii 2006: 164)
 b.**What a big house_i* does he live in *t_i*! (ibid.)

The contrast in (12a, b) shows that both wh-movement and SAI must be applied to wh-interrogatives. On the other hand, sentences (13a, b) suggest that only wh-movement (but not SAI) is involved in the derivation of wh-exclamatives. As well as SAI, NPI-licensing also differentiates wh-interrogatives from wh-exclamatives, as shown below:

- (14) a. How does Joe save any money? (Elliot 1974: 234)
 b.*How Joe saves any money! (ibid.)

In (14a), the NPI *any* occurs, but not in (14b). In general, it is assumed that NPIs are restricted to occurring in a position where they are c-commanded by an affective operator like negation and a wh-word (Klima 1964). The contrast in (14) suggests that the E-wh-phrase c-commanding the NPI in (14b) cannot

license its occurrence. Thus, it is assumed that wh-interrogatives and wh-exclamatives form different types of A-bar chains. More precisely, the former form a quantificational A-bar chain which licenses the occurrence of NPIs, but the latter do not.

To summarize, wh-exclamatives resemble wh-interrogatives in the following two aspects: obligatory wh-movement and island constraints. These two constructions, however, are different in that SAI and NPI-licensing are not concerned with wh-exclamatives. In other words, E-wh-movement does not form a kind of quantificational A-bar chain that triggers SAI and licenses NPIs.

2. 1. 2 Complementation

Elliot (1976) and Grimshaw (1979) point out that in English, factive predicates can embed wh-exclamatives, but not wh-interrogatives. Let us look at the following examples:

- (15) a. I wonder whether he lives in a large house. (Ono and Fujii 2006: 165)
 b. *I wonder what a large house he lives in. (ibid.)
- (16) a. *It's amazing whether he lives in a large house. (Ono and Fujii 2006: 165)
 b. It's amazing what a large house he lives in. (ibid.)

The contrast in (15a, b) shows that the verb *wonder*, which selects [+WH] complements, cannot embed the wh-exclamative. In (16b), on the other hand, the factive predicate *be amazing* can embed the wh-exclamative, but not the wh-interrogative in (16a). Thus, factive predicates, which do not select any [+WH] complements, can select wh-exclamatives as their CP complements.

Next, let us consider some differences between Root Exclamatives (REs) and Embedded Exclamatives (EEs). Note that these two constructions are differentiated in that there is no lexical selector which takes an RE as its complement. Having this point in mind, look at the following examples:

- (17) a. *Who/what/what book she saw! (cf. Who/what/what book did she see?)
(Zanuttini and Portner 2003: 74)
- b. *Why she did what she did! (ibid.)
- c. How tall she is! (cf. How tall is she?) (ibid.)
- d. What books he reads! (cf. What books does he read?) (ibid.)
- (18) a. It's amazing who/what/what book she saw.
(Zanuttini and Portner 2003: 73)
- b. It's amazing why she did what she did. (ibid.)
- c. It's amazing how tall she is. (ibid.)
- d. It's amazing how quickly she reads. (ibid.)

Examples (17a-d) suggest that such wh-phrases as *who*, *what*, *what book*, and *why*, cannot appear in REs. In (18a-d), the same wh-phrases occur in the EEs. In general, wh-phrases like *who*, *what*, *what book*, and *why*, can be used in wh-interrogatives. When taken together with this property, examples (18a-d) suggest that simple wh-operators can behave like E-wh-operators only in EEs.

To sum up, a wh-phrase like *who*, *what*, *what book*, and *why* can occur as an E-wh-operator only in EEs. This property is, furthermore, contingent upon the presence of a lexical selector or a factive predicate.

2. 1. 3 Topicalization

Regarding the internal structure of wh-exclamatives, Zanuttini and Portner (2003) point out that topicalization is impossible in EEs, as shown below:⁴

- (19) * It's amazing what a nice book, to your sister, they gave (her) as a gift.
(Zanuttini and Portner 2003: 75)

The wh-exclamative in (19) cannot occur as an RE as shown below:⁵

(20) * What a nice book, to your sister, they gave (her) as a gift.

NEs, however, allow topicalization when they are combined with PPs containing a wh-phrase.⁶ Let us look at the following examples:⁷

- (21) a. In how many countries, that kind of behaviour, autocratic leaders would simply not tolerate! (Radford 2009: 328)
- b. In how many countries of the world, such behaviour, under no circumstances would autocratic leaders tolerate! (ibid.)

One interesting property that holds true for all the wh-exclamatives in (21a-b) is the presence of negative markers such as *not* and *under no circumstances*. Furthermore, all the E-wh-operators in (21a-b) involve the quantificational expressions, and refer to the number of countries. These two properties will be taken as the ones which characterize NEs (see section 1). In (21a), the E-wh-phrase precedes the topic element. In (21b), the topic element, the inverted negative expression, and the inverted auxiliary are sandwiched between the E-wh-phrase and the rest of the sentence.

To summarize, NEs allow topicalization, but REs and EEs do not. This fact will be interpreted in two ways. First, one might interpret the fact as suggesting that only NEs (but not EEs) involve multiple CP projections. This interpretation, however, will lead us to discard the generalization that all wh-exclamatives have the same layered CP structure. The other interpretation will be that both NEs and EEs have layered CPs, but for some reason, topicalization is impossible in REs and EEs, but possible in NEs. In this paper, we argue the latter is on the right track.

2. 1. 4 E-wh/-how-operators and *Such/so* Phrases

In the framework of transformational grammar in its early stage (i.e., Standard Theory), it was claimed that there is a set of transformational rules

which derives wh-exclamatives from *such/so* sentences (Elliot 1976, Imai and Nakajima 1978). According to this assumption, the pairs in (22) and (23) paraphrase each other:

(22) a. She is such a beautiful woman!

b. What a beautiful woman she is!

(23) a. She is so beautiful!

b. How beautiful she is!

The *such* sentence in (22a) is seen as the source from which the wh-exclamative is derived. Similarly, the *so* sentence in (23a) is regarded as the source of the how-exclamative in (23b).

Supportive evidence for the assumption stated above comes from the fact that the distributional difference between E-wh/-how-phrases is similar to that between *such/so* phrases:

(24) i a. what a difficult problem b. how difficult a problem [count singular]

ii a. what difficult problems b. *how difficult problems [plural]

iii a. what difficult work b. *how difficult work [non-count]

(Huddleston and Pullum 2002: 920)

(25) i a. such a difficult problem b. so difficult a problem [count singular]

ii a. such difficult problems b. *so difficult problems [plural]

iii a. such difficult work b. *so difficult work [non-count]

(Huddleston and Pullum 2002: 923)

In (24 ia/ ii a/ iii a), the wh-word *what* modifies each of the NPs regardless of such distinctions as singular/plural and countable/non-countable. As well as *what*, *such* can occur in (25 ia/ ii a/ iii a). On the other hand, examples (24 ib/ ii b/ iii b) suggest that *how* serves to modify an adjective, and cannot co-occur with plural/non-count NPs. As we see from examples (25 i/ ii/ iii b), *so*

resembles *how* in that it is also unable to co-occur with plural/non-count NPs.

To summarize, E-wh-phrases resemble *such* phrases in terms of their internal structures, and the same is true for E-how-phrases and *so* phrases.

2. 2 Some Discourse/Semantic Data

2. 2. 1 Factivity

Portner and Zanuttini (2000) and Zanuttini and Portner (2000, 2003) have identified three main semantic criteria for exclamative status: (I) factivity, (II) scalar implicature, and (III) question/answer functions.⁸ First, as we have already seen in 2.1.2, factive predicates can embed wh-exclamatives. Another fact regarding factivity arises from the following example:

(26) * I don't know/realize how very cute he is. (Zanuttini and Portner 2003: 47)

In (26), the exclamative is embedded under the predicate *know/realize* in the present tense and with the first person subject. In the sentence, the presupposition expressed by the wh-exclamative contradicts the denial of the speaker's knowledge. This fact will be seen as evidence for the factivity meaning component of wh-exclamatives.

According to Zanuttini and Portner (2003), a factive operator in the CP domain is assumed to be responsible for factivity.

2. 2. 2 Scalar Implicature

With regard to the second criterion, *scalar implicature*, Zanuttini and Portner (2003) point out that "exclamatives introduce a conventional scalar implicature to the effect that the proposition they denote lies at the extreme end of some contextually given scale" (Zanuttini and Portner 2003: 47). Let us consider the following examples:

(27) a.^{??}How very cute he is! — though he's not extremely cute.

(Zanuttini and Portner 2003: 47)

- b. He's quite cute! — though not extremely cute. (ibid.)

In (27a), the exclamative conveys the meaning that his extreme degree of cuteness is greater than all other alternatives in the speaker's mind. The proposition that the *though* clause expresses, however, semantically serves to conflict with the implicature of his extreme degree of cuteness, and therefore example (27a) is unacceptable. The sentence including *quite* in (27b), on the other hand, can be followed by the *though* clause. Thus, scalar implicature is related to (the syntactic form of) wh-exclamatives, but not to the meaning that other sentences including such words as *so*, *such*, *quite*, etc, convey.

Another fact concerning scalar implicature is shown below:

- (28) a. *It isn't amazing how very cute he is! (Zanuttini and Portner 2003: 47)
b. It is amazing how very cute he is! (ibid.)

In (28a), the wh-exclamative cannot be embedded under the negated factive predicate. In this case, the denial of the amazingness of his cuteness is incompatible with the scalar implicature.

Given the facts above, Zanuttini and Portner (2003) propose that widening, which is one of the two main semantic components of wh-exclamatives, accounts for the facts attributed to the scalar implicature with which wh-exclamatives are associated.

2. 2. 3 Question/Answer Functions

The third property that Zanuttini and Portner (2003) note is that wh-exclamatives are unable to function as questions nor answers. First, look at the following examples:

- (29)A: How tall is he? Seven feet. (Zanuttini and Portner 2003: 47)

(30)A: How very tall he is! B: *Seven feet. / He really is! / Indeed! / No he's not!
(Zanuttini and Portner 2003: 47)

Example (29) shows that wh-interrogatives are used to ask a question. In (30), on the other hand, the exclamative is not answered. Next, look at the following example:

(31)A: How tall is Tony's child? B: *How very tall he is!
(Zanuttini and Portner 2003: 48)

In (31), the exclamative is used as a reply to the wh-interrogative, but the sentence is unacceptable.

To summarize, wh-exclamatives do not function as questions nor answers. This property distinguishes wh-exclamatives from other similar sentences.

3. Previous Approaches

In the previous section, we have seen some syntactic and semantic characteristics of wh-exclamatives. In this section, reviewing Imai and Nakajima (1978), we will consider their insights into the following two syntactic properties of wh-exclamatives: movement and the categorial similarity between E-wh-/how-operators and so/such phrases. Furthermore, we will review Zanuttini and Portner's (2003) analysis of wh-exclamatives which is based on the following two syntactic properties: a wh-operator-variable configuration and a factive operator.

3.1 Imai and Nakajima (1978)

In the framework of transformational grammar, Elliot (1976) claims that wh-exclamatives are derived from declaratives containing *so/such*, though specific transformational rules are not proposed. Following Elliot's (1976) claim, Imai and Nakajima (1978) propose the following set of transformational

rules which derive wh-exclamatives from *so* sentences:

- (32) a. John has so much beautiful a bird. [So sentence]
 b. What a beautiful bird John has! [Wh-exclamative]
- (33) a. *Much* deletion : — WH COMP John has so O beautiful a bird
 b. Adjective shift: — WH COMP John has so a beautiful bird
 c. *So-such* alternation rule: — WH COMP John has such a beautiful bird
 d. *Wh* attachment: — WH COMP John has wh#such a beautiful bird
 e. Exclamatory movement: — WH COMP what a beautiful bird John has

According to Imai and Nakajima (1978), the transformational rules described in (33) derive the wh-exclamative in (32b) from the *sodeclarative* in (32a). Underlying this analysis is the assumption that wh-/how-exclamatives and *such/so* declaratives are paraphrasable.

The main insight of Imai and Nakajima (1978) is at least twofold. First, the fact that the categorial similarity between E-wh-/how-operators and *so/such* phrases naturally follows from the transformational rules in (33). Second, the transformational rule termed exclamatory movement distinguishes wh-exclamatives from other wh-operator constructions. This is especially crucial for the analysis of wh-exclamatives, though we do not adopt the transformation grammar framework in this paper.

3. 2 Zanuttini and Portner (2003)

Zanuttini and Portner's (2003) analysis has two main components of the meaning of exclamatives: factivity and widening.⁹ The former introduces a presupposition that the proposition expressed by the wh-exclamative is true. As for the latter, let us consider a sentence like *what a beautiful girl John met!*. In this example, the domain of quantification for widening which is a set of women that John met in the past is expanded to the domain which includes the additional beautiful girl. In this case, the girl whose beauty is extreme in

the expanded domain is seen as a source of surprise or amazement. In principle, the sentential force of widening is associated with any clause that realizes factivity and a wh-operator-variable configuration. On the basis of the semantic consideration of wh-exclamatives, the following syntactic structure is proposed by Zanuttini and Portner (2003):

(34) ... [_{CP2} E-Wh [_{CP1} FACT [_{CP0} ...

In this structure, the E-wh-operator semantically introduces a set of alternatives, and the factive operator contributes to the presupposition meaning. The structure in (34) syntactically realizes factivity and the wh-operator-variable configuration, and hence is related to the sentential force of widening. In this regard, wh-exclamatives which have the widening meaning component are different from wh-interrogatives which introduce a set of alternatives into the discourse. Wh-exclamatives, therefore, cannot be used as questions. In addition, wh-exclamatives do not function as answers, since they are factive.

With respect to the relationship between wh-exclamatives and topicalization, Zanuttini and Portner (2003) indicate that Italian and Paduan wh-exclamatives allow left-dislocation when they are combined with “E-only wh-operators”, which denote a set of E-wh-operators used only in wh-exclamatives, but not in other constructions like wh-interrogatives:^{1 0}

(35) TABLE 1. Distribution of elements in Italian WH constructions.

	Spec, CP ³	Spec, CP ²	spec, CP ¹	C ⁰
EXCLAMATIVE	E-only WH	FACT	(Left-dislocation)	<i>che</i>
EXCLAMATIVE		non-E-only WH	FACT	V

(Zanuttini and Portner 2003: 71)

(36)a. [E-only wh-exclamative]

Che tanti libri, a tua sorella, che le hanno regalato!
 Which many books to your sister that her have given
 ‘How very many books they gave to your sister!’

(Zanuttini and Portner 2003: 66)

b. [Non-E-only wh-exclamative]

* Cosa, a tua sorella, (che) le hanno regalato!

What to your sister that her have given (ibid.: 68)

(37) TABLE 2. Distribution of elements in Paduan WH constructions.

	Spec, CP ³	Spec, CP ²	spec, CP ¹	C ⁰
EXCLAMATIVE	E-only WH	FACT	(Left-dislocation)	<i>che</i>
EXCLAMATIVE		non-E-only WH	FACT	<i>che/no+V</i>

(Zanuttini and Portner 2003: 73)

(38)a. [E-only wh-exclamative]

Che bel libro, a to sorella, che i ghe ga regal?!
 What nice book to your sister that S.CL her have given
 ‘what a nice book, to your sister, they gave her as a gift!’

(Zanuttini and Portner 2003: 60)

b. [Non-E-only wh-exclamative]

??Cossa, a to sorella, (che) i ghe ga regal?!

what to your sister that S.CL her have given

(ibid.: 73)

As shown in the tables in (35) and (37), Italian and Paduan E-only wh-exclamatives have three layered CPs, and the lowest CP layer CP¹ is dedicated to a left-dislocated constituent. For example, in (36a), the E-only wh-exclamative in Italian allows the left-dislocated constituent to occur between the wh-operator and the complementizer, but, in (36b), the non E-onlywh-

operator does not. In English EEs, on the other hand, topicalization is impossible, as shown below:

- (39) * It's amazing what a nice book, to your sister, they gave (her) as a gift.
(Zanuttini and Portner 2003: 75)

Hence, Zanuttini and Portner (2003) claim that there are only two layered CPs in English EEs, as shown below:

(40) TABLE 3. Distribution of elements in English embedded WH constructions.

	Spec, CP ²	Spec, CP ¹	C ⁰
EXCLAMATIVE	E-only WH	FACT	0
EXCLAMATIVE	non-E-only WH	FACT	0

(Zanuttini and Portner 2003: 76)

To summarize, according to Zanuttini and Portner's (2003) analysis of wh-exclamatives, Italian, Paduan, and English wh-exclamatives contain a factive operator and a wh-operator-variable configuration, both of which are associated with the sentential force of widening. Differentiated from Italian and Paduan wh-exclamatives, English wh-exclamatives have only two recursive CP layers which are occupied by an E-wh-operator and a factive operator.

When we reconsider Zanuttini and Portner's (2003) analysis, there seems to be at least two questions. One obvious empirical question is why NEs allow topicalization. Extending Zanuttini and Portner's (2003) proposal to NEs, we will consider this question in the next section. The other question that arises here is whether their proposal that any clause involving a factive operator and a wh-operator-variable configuration is compatible with the cartographic framework proposed by Rizzi (1997, 2004, 2009). Concerning this question, however, Zanuttini and Portner (2003) do not adopt Rizzi's (1997) cartographic approach, and raises some issues about explanatory value of ForceP in the CP domain. For example, "If one were to consider that our CP³ is

Rizzi's ForceP, one would have to accept that when the projection contains a non-E-only wh phrase, the force features it contains are never overtly realized. This would leave open the question of how it participates in the expression of force" (Zanuttini and Portner 2003: 72). In this regard, Rizzi (2009) claims that there is a functional projection dedicated to an E-wh-operator in the CP domain, and the projection Excl(amative)P encodes the force of a sentence as "Exclamation". Let us suppose that this claim is correct. Then, the next issue is how Rizzi's (2009) view incorporates Zanuttini and Portner's (2003) important insight that wh-exclamatives concern factivity and involves a factive operator in syntax. In the next section, we will consider this issue in detail, and propose a cartographic analysis which also reflects Imai and Nakajima's (1978) idea that wh-exclamatives are derived by exclamatory movement

4. Proposal

4. 1 A Cartographic Analysis of Wh-Exclamatives

4. 1. 1 The Split CP Hypothesis

In the previous section, we have reviewed Zanuttini and Portner's (2003) analysis of wh-exclamatives. In their analysis, there must be at least more than two recursive CP positions, and in some languages such as Italian and Paduan, an additional CP position for a left-dislocated constituent to occupy exists between [Spec, CP₂] occupied by a factive operator and [Spec, CP₀] (see (35) and (37)). Due to the space limitation of this study, we will only consider what elements occur between the E-wh-position and [Spec, CP₀] in English wh-exclamatives.^{1 1} Though Zanuttini and Portner (2003) do not adopt the cartographic framework by Rizzi (1997, 2004, 2009), in what follows, we will propose that the internal structure of wh-exclamatives be split into multiple discourse-related CP projections.

According to the Split CP Hypothesis (the SCPH), originally proposed by Rizzi (1997), the CP domain of syntactic structure is split into the following distinct functional projections: Force Phrase, Topic Phrase (TopP), Focus

Phrase (FocP), Topic Phrase (TopP), and Finite Phrase (FinP). In the original SCPH, there are two TopPs, but for the sake of discussion, we will not consider the so-called “Lower Topic”, which Rizzi (1997) assumes to be present between Focus and Fin.^{1 2} Making this slight modification on the original SCPH, we first adopt the following simplified recursive CP structure:^{1 3}

(41) Force ... Topic ... Focus ... Fin ...

(42)a. Mary said that such a strange animal never has she seen.

b. Mary said ...

[_{ForceP} that [_{TopP} such a strange animal [_{FocP} never [_{FinP} [_{Fin} has [_{IP} she ... seen ...]]]]]]]

(41) is the simplified version of the SCPH, where Topic and Focus are sandwiched between Force and Fin. Concerning Topic and Focus, we follow Rizzi’s (1997) two assumptions. First, the recursion of Topic is possible. Second, Focus is not recursive, and only one FocP occurs in the CP domain.^{1 4} In (42b), the force of the sentence is encoded as “declarative” or “assertive” by the complementizer occupying the Force head. The topic constituent precedes the focus constituent, and the inverted auxiliary occupies the Fin head (or the Foc head).

Now, considering Rizzi’s (2009) claim that the ExclP exists in the CP domain, we will make necessary modifications to the SCPH in (41). First, we assume that Excl(mative)P occurs above Topic. This is because in Italian and Paduan wh-exclamatives, a left-dislocated constituent (or a topic) can follow an E-wh operator, as shown below:

(43) Force ... Excl(amative) ... Topic ... Focus ... Fin ...

(44) Che tanti libri, a tua sorella, che le hanno regalato!

Which many books to your sister that her have given

‘How very many books they gave to your sister!’ (Zanuttini and Portner 2003: 66)

In (44), the left-dislocated element (or the topic element) occurs between the E-wh-operator and the complementizer *che* in the Fin head. On the basis of this data, as shown in (43), the ExclP is assumed to occur between the ForceP and the TopP.^{1 5} The assumption made here is compatible with Imai and Nakajima's (1978) view that exclamatory movement is unique to wh-exclamatives, but not to other wh-constructions.

In the next section, we will consider how a factive operator is licensed to occur in the CP domain.

4. 1. 2 Locality and the Licensing of a Factive Operator

Having proposed the SCPH involving the ExclP, the next goal is to establish the licensing system of a factive operator. Following Watanabe's (1993) idea that factive complements have a factive operator in the CP domain, Zanuttini and Portner's (2003) claim that in the internal structure of EEs, an E-wh-operator occurs above a factive operator, which is licensed by a factive verb. Concretely, the internal structure of a factive CP and that of a wh-exclamative are schematically illustrated below:

- (45) a. factive verb [_{CP2} that [_{C2} [_{CP1} OP_{FACT} [_{CP0} ~~that~~ ... [Factive CP]
 b. factive verb [_{CP2} E-wh [_{C2} [_{CP1} OP_{FACT} [_{CP0} ... [Wh-Exclamative]

In (45a), the complementizer moves from the C0 head to the C2 head which mediates the two CP layers. According to Watanabe (1993), this configuration is required for the factive predicate to select the factive CP. In (45b), the factive verb selects the wh-exclamative as its CP complement. In this case, the C2 head also mediates between the factive verb and the factive operator. What is crucial in the two configurations in (45) is that the presence of a factive operator blocks topicalization because the factive operator and a topic compete for the same position. This is confirmed with the following examples:

(46) a. *Mark regrets that Jane, he fired.

b. *It's amazing what a nice book, to your sister, they gave (her) as a gift.

(Zanuttini and Portner 2003: 75)

Thus, Zanuttini and Portner's (2003) CP recursion analysis has two main syntactic insights. First, the source of a factive operator in English EEs is a factive predicate. Second, topicalization is impossible in factive CPs and EEs because of the presence of a factive operator.

In turn, let us consider whether and how the revised SCPH proposed in the previous section reflects the two insights stated above. Let us begin with the insight that the presence of a factive operator blocks topicalization. This can be directly reflected in the revised SCPH by assuming that the factive operator occurs in the TopP. Next, let us consider the other insight that the source of a factive operator is a factive predicate in factive CPs and EEs. In the present analysis, a factive verb can select either a factive CP or a wh-exclamative as its CP complement as shown below:

(47) a. ... regret [_{ForceP} [_{Force} that [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} that ...]]]]]

b. ... regret [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} ...]]]

In (47a), the factive predicate selects the ForceP, and the factive operator occurs in the TopP. Similarly, in (47b), the factive verb takes the ExclP as its complement, and the factive operator occurs in the TopP. In both cases, there is a lexical selector which takes either a factive CP or a wh-exclamative, and the Force/Excl head selects the TopP including the factive operator as its complement. Here, we assume that there is a locality restriction imposed on the Force/ExclP and the TopP occupied by a factive operator: in other words, there must be no extra topic element between the ForceP/ExclP and the TopP because the additional topic blocks the complementation relationship between them. This idea is roughly illustrated as follows:

- (48) a. factive predicate [_{ForceP/ExclP} that/E-wh [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]]
 b. *factive predicate [_{ForceP/ExclP} that/E-wh [_{TopP} Topic [_{TopP} OP_{FACT} ... [_{FinP} ...]]]]

Recall one of Rizzi's (1997) assumptions that topic is recursive in nature. In principle, an additional topic can occur, but this is impossible in (48b) because of the locality restriction stated above. Before turning to the derivation of REs, let us briefly consider one of the well-known properties regarding factive complements. Look at the following example:

- (49) a. ?* Bill didn't confirm that Roger had eaten anything. (Watanabe 1993: 534)
 b. Bill didn't allege that Roger had eaten anything. (ibid.)

The contrast above suggests that factive complements do not allow long-distance NPI licensing (Kiparsky and Kiparsky 1971, Ross 1967). Following Progovac (1988), Watanabe (1993) proposes that the licenser of an NPI is a negative operator which exists in the CP domain.¹⁶ Furthermore, the negative operator and a factive operator compete for the same position in the CP domain. According to this analysis, in (49a), no negative operator is present in the CP domain because a factive operator exists in [Spec, CP], and hence the sentence is ungrammatical. Given this analysis by Watanabe (1993), we modify the present analysis in the following way. First, let us tentatively assume that a negative operator occurs in [Spec, FocP] only if the Foc head is endowed with a [+Neg] feature. Second, let us further assume that in the case of factive CPs, the Foc head has no [+Neg] feature, and no negative operator is merged in [Spec, Foc]. Thus, the ungrammaticality of (49a) is attributed to the lack of a negative operator in the factive CP. An important point here is that there is no source of [+Neg] feature in factive CPs.

Finally, let us consider the derivation of REs. Apparently, there seems to be no lexical element which selects an RE as its complement. An obvious question arises from this: what element licenses a factive operator? According to

Zanuttini and Portner (2003), in REs, the licenser of a factive operator is an E-only wh-operator.¹⁷ If we suppose this is correct, the next question is whether the locality restriction imposed on the ExclP and TopP in EEs is applied to REs. Concerning this question, as we have already seen, REs and NEs behave differently:

(50)* What a nice book, to your sister, they gave (her) as a gift. [RE]

- (51)a. In how many countries, that kind of behaviour, autocratic leaders would
 simply not tolerate! [NE] (Radford 2009: 328)
- b. In how many countries of the world, such behaviour, under no circumstances would
 autocratic leaders tolerate! [NE] (ibid.)

As shown by the contrast above, in REs, an additional topic can occur between the ExclP and the rest of the sentence, but the same is not true for NEs. We take this contrast as suggesting that the locality restriction between the ExclP and the TopP is imposed on REs, but not on NEs. To sum up, REs and NEs have the following different CP structures:

- (52) a. [_{ForceP} [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]]] [RE]
 b.* [_{ForceP} [_{ExclP} E-wh [_{TopP} Topic [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]]]] [RE]
- (53) a. [_{ForceP} [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]]] [NE]
 b. [_{ForceP} [_{ExclP} E-wh [_{TopP} Topic [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]]]] [NE]

In the next subsection, we attempt to account for some data concerning factive CPs, REs, EEs and NEs.

4. 2 Consequences

4. 2. 1 Factive CPs and EEs

In the previous subsection, the following structure is proposed for factive CPs:

(54)... regret [_{ForceP} [_{Force} that [_{TopP} OP_{FACT} [_{FocP} ... [_{FinP} [_{Fin} that ...

In (54), the ForceP selects the TopP including the factive operator as its complement, and the two phrases must be local. If an additional topic occurs between the ForceP and the TopP, the sentence will violate the locality restriction imposed on the two phrases. Concerning the FocP in factive CPs, we have assumed that the Foc head does not have any [+Neg] feature. The present analysis of factive CPs will make the following predictions:

- (55) In factive CPs, ...
- a. topicalization is impossible,
 - b. negative inversion is impossible,
 - c. contrastive focalization is possible.

The first prediction in (55a) is straightforward because the locality restriction bans the recursion of topic. Concerning the second prediction in (55b), the FocP cannot trigger negative inversion because it lacks a [+Neg] feature. The third prediction in (55c) is also straightforward because the FocP gives an empty position to a certain constituent endowed with a [+contrastive focus] feature. All the predictions stated in (55) are confirmed with the following sentences:

- (56) a. *Mark regrets that Jane, he fired. [Topicalization]
 b. *Mark regrets that never has he seen such a strange animal. [Negative inversion]
 c. Mark didn't understand the first part of your thesis. In fact, he regrets that most of it he was unable to understand. [Contrastive focus]
- (Zanuttini and Portner 2003: 63)

As observed by Zanuttini and Portner (2003), sentence (56c), where the

contrastive focus element occurs in the CP domain, is grammatical. This fact leads Zanuttini and Portner (2003) to conclude that topic and focus are complementary distributed. This is compatible with the present analysis based on the SCPH, where topic and focus are dedicated to distinct positions.

Next, let us consider EEs. The present analysis of EEs is shown below:

(57) ... regret [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} ...

In (57), the ExclP and the TopP must meet the locality requirement. One obvious prediction the present analysis makes is that topicalization is impossible in EEs. This prediction is confirmed with the following example:

(58) * It's amazing what a nice book, to your sister, they gave (her) as a gift.
(Zanuttini and Portner 2003: 75)

The proposed analysis, however, cannot make any clear prediction concerning the occurrence of negative inversion in EEs. In general, negative expressions are incompatible with wh-exclamatives except NEs. For this reason, we cannot readily examine whether negative inversion can be combined with wh-exclamatives in embedded contexts. Regarding contrastive focus, one might make the following simple prediction: namely, the focalization counterpart of (50) will be grammatical because [Spec, FocP] provides a position in order for a [+contrastive focus] constituent to occupy. For the scope limitation of this study, we will leave this issue open for future research.

4. 2. 2 REs and NEs

Concerning REs and NEs, the following structures are proposed for them:

(59) a. [_{ForceP} ... [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} ...]]]] [RE]
 b. [_{ForceP} ... [_{ExclP} E-wh [_{TopP} Topic [_{TopP} OP_{FACT} ... [_{FinP} ...]]]]] [NE]

In (59a, b), there is no lexical element that selects the wh-exclamative as its complement. In both cases, the source of a factive operator is regarded as the E-wh-operator occupying [Spec, ExclP]. The two operators, however, have different properties with respect to the locality relationship between them. On the one hand, the locality restriction is imposed on the E-wh-operator and the factive operator in REs. The same locality restriction, on the other hand, does not apply to EEs. Thus, it is predicted that topicalization is possible in EEs, but not in REs. This prediction is confirmed with the following examples:

(60) * What a nice book, to your sister, they gave (her) as a gift. [RE]

(61) a. In how many countries, that kind of behaviour, autocratic leaders would simply not tolerate! [NE] (Radford 2009: 328)

b. In how many countries of the world, such behavior, under no circumstances would autocratic leaders tolerate! [NE] (ibid.)

As previously mentioned, Radford (2009) provides (61a, b) in order to claim that in English, the CP of clause structure can be split into multiple CP layers in accord with the SCPH. The present analysis is basically harmonious with the core of the claim.

(62)a. [_{ForceP} [_{ExclP} In how many countries [_{TopP} that kind of behaviour [_{TopP} OP_{FACT} ... [_{IP} autocratic leaders would simply not tolerate]]]]]]

b. [_{ForceP} [_{ExclP} In how many countries of the world [_{TopP} such behavior [_{TopP} OP_{FACT} [_{FocP} under no circumstances [_{FinP} would [_{IP} autocratic leaders tolerate]]]]]]]]]]

5. Conclusion

In this paper, we have argued that wh-exclamatives are at least classified into two types: REs and EEs which do not allow topicalization and NEs which do. Reviewing Imai and Nakajima (1978), Portner and Zanuttini (2000), and

Zanuttini and Portner (2000, 2003), we have identified the following two important insights into wh-exclamatives. First, wh-exclamatives are derived by exclamatory movement which involves a particular type of scalar-related wh-phrase that is similar to *so/such* phrases (Imai and Nakajima 1978). Second, wh-exclamatives are tied to widening and factivity, and these two meaning components are syntactically realized by a wh-operator-variable configuration and a factive operator (Zanuttini and Portner 2003). Given these two advantages, we have proposed the following structures for REs, EEs, and NEs on the basis of the SCPH by Rizzi (1997, 2004, 2009):

- (63) a. [_{ForceP} ... [_{ExclP} E-wh [_{TopP} OP_{FACT} ... [_{FinP} ...]]]] [RE]
 b. factive predicate [_{ForceP/ExclP} that/E-wh [_{TopP} OP_{FACT} ... [_{FinP} [_{Fin} ...]]]] [EE]
 c. [_{ForceP} ... [_{ExclP} E-wh [_{TopP} Topic [_{TopP} OP_{FACT} ... [_{FinP} ...]]]]] [NE]

(63a) is the internal structure of REs, and the E-wh-operator and the factive operator must be local in the sense that no additional topic can occur between them. In this case, the E-wh-operator is assumed to be the source of the factive operator. (63b) is the internal structure of EEs, and the E-wh-operator and the factive operator must meet the same locality requirement. The structure of NEs in (63c) also contains the two operators, but in this case, no locality restriction is relevant to them. Hence, a topic can occur between the two operators.

The analysis in (63) raises a lot of empirical and conceptual issues with respect to wh-exclamatives and the licensing of a factive operator. On the empirical side, one might wonder whether or not the configuration in (63c) can be embedded under factive predicates (, and if so, why?). Another issue is whether so-called root phenomena like topicalization and negative inversion are applicable to NEs in embedded contexts. On the conceptual side, still less clear is why the locality restriction on an E-wh-operator and a factive operator does not work in the case of NEs. We leave these issues open for future

research.

Finally, one remark needs to be made concerning the relationship between the derivation of wh-exclamatives and the licensing of a factive operator. If we suppose Zanuttini and Portners' (2003) criteria for identifying wh-exclamatives are correct, all the wh-exclamatives must contain an E-wh operator-variable configuration and a factive operator. As claimed in the above, there seems to be a certain set of E-wh-operators which non-locally license the occurrence of a factive operator. Thus, if a language has such E-wh-operators (or E-markers), it will be predicted that the language may allow wh-exclamative sentences with which root phenomena co-occur. This prediction must be examined from a cross-linguistic perspective, which we would like to pursue in future.

Notes

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¹ In this paper, we will ignore the semantic/stylistic differences between wh-/how-exclamatives. In this connection, Huddleston and Pullum (2003) indicate that in root contexts, how-exclamatives are more formal than wh-exclamatives. Additionally, we will not consider *Nominal Extraposition*, a kind of exclamative construction (e.g., *It's amazing the difference*). Interested readers are referred to Michaelis and Lambrecht (1996).

² Note that the abbreviation "NEs" refers to the set of wh-exclamatives which allow the occurrence of negation.

³ There have been some cartographic approaches to Japanese exclamatives (Ono 2002, Yamato 2010). Various issues concerning Japanese exclamatives are beyond the scope of this study.

⁴ The fact also suggests that Left Dislocation (LD) is also impossible in EEs.

⁵ Two informants whose native language is English pointed out to me that the sentence given here is ungrammatical.

⁶ In the literature, Quirk et al. (1985) point out that PPs behaving as E-wh-operators are rare in English wh-exclamatives. Given this, NEs may have another syntactic property: namely, they can co-occur with PPs behaving as E-wh-operators. We leave this issue for future research.

⁷ Radford (2009), in fact, provides (21 a,b) as evidence for the argument that in English, CP is split into multiple functional projections including Topic and Focus in accordance with the split CP hypothesis proposed by Rizzi (1997, 2004).

⁸ Another criterion for identifying wh-exclamatives is that unlike interrogatives, they cannot introduce a question into the discourse:

(i) a. How tall is he? Seven feet or eight feet? (Zanuttini and Portner 2003: 48)
b. *How very tall he is! Seven feet or eight feet? (ibid.)

⁹ In this paper, we will not go into the details of the semantic formulations of factivity and widening. Interested readers are referred to Zanuttini and Portner (2003).

¹⁰ The three tables given in this section are adapted to focus on exclamatives. Thus, all of the interrogative parts in the original tables are omitted.

¹¹ In Paduan wh-exclamatives, a left-dislocated element can occur on the left of the E-wh-operator (see Zanuttini and Portner 2000; 2003, and references cited therein)

¹² Interested readers are referred to Haegeman (2003, 2006, 2007, 2010) and Rizzi (2004).

^{1 3} Recently, the SCPH has been extended from Italian to many languages like English, Japanese, etc. Although a lot of open issues remain concerning the applicability limit of the SCPH, topicalization and negative inversion cannot be taken to involve exactly the same head (Bianchi 1999, Radford 2004; 2009, Rizzi 1997).

^{1 4} According to Rizzi (1997), a recursion of FocP produces a structure where a focus element introducing new information occurs in the presupposition complement. Such a structure results in the interpretive clash, and hence recursion of FocP is banned. No such interpretive restriction is imposed on recursion of Topic.

^{1 5} In this paper, we will not discuss the problem of whether there is an additional Topic between Force and Excl.

^{1 6} Concerning the details of this issue, Laka (1990) and Progavac (1988, 1994) argue that NPI licensing in the CP complements of such verbs as *doubt* and *deny* must depend on the presence of a negative complementizer. One of the crucial differences is that Progavac (1994) proposes that an operator in [Spec, CP] licenses NPIs, while Laka (1990) claims that the negative complementizer is an NPI licenser. In this paper, we will not consider and compare the details of the two proposals, but it seems to be plausible to assume that factive complements are not concerned with any functional elements/operators endowed with a [+Neg] feature.

^{1 7} Concerning the licensing of a factive operator in root/embedded contexts, Zanuttini and Portner (2003) state “Specifically, we would say that English E-only WH phrases may license FACT, while non-E-only ones may not. In root exclamatives. Then we must have an E-only WH phrase. In embedded clauses, in contrast, the higher predicate is able to license FACT, just as in Watanabe’s proposal for embedded factive declaratives. For this reason, embedded exclamatives are allowed regardless of the type of WH operator present, while root cases require an E-only WH phrase.” (Zanuttini and Portner 2003: 76). We have no answer to the question of why E-only WH phrases can behave as FACT licensers in root wh-exclamatives.

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