The Force of Negation in Wh Exclamatives and Interrogatives*

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1   Introduction

Interrogatives and exclamatives both may contain an instance of negation. When a negative marker occurs in an interrogative clause, its presence is easily detectable, as in (1); in contrast, when it occurs in an exclamative, its contribution is often hard to see, as in (2):

(1)   Parcossa *no* ve-to   anca ti!? (interrogative)
        why   neg go-s.cl also you
        'Why aren't you going as well?'

(2)   Cossa *no* ghe dise-lo! (exclamative)
        what neg him say-s.cl
        'What things he's telling him!'

Exclamatives are one of a number of cases where the semantic force of a negative morpheme appears to be lost; these have been called *expletive negation.* In this paper, we will examine wh interrogatives and wh exclamatives with the goal of understanding the contrast in the apparent effect of negation in (1) and (2).

One could assume that the negative morpheme *no* in (2) is not semantically negative, but this would be dissatisfying in several respects. First of all, in general we of course would prefer not to postulate an ambiguity, on fear of missing a generalization. Second, the question arises of why it is the negative morpheme which takes on the pleonastic function, if the meaning of this item is not implicated in the constructions. And third, we are not aware

of any satisfactory account of which environments trigger the use of expletive negation. Our hope is that an analysis based on ordinary negation will allow us to do better on these points.

Paduan is interesting to study in this connection because it has two syntactically distinct negative markers, both morphologically realized as *no*. In some instances *no* is an independent syntactic head, while in others it cliticizes onto the verb. This latter form, which we refer to as 'clitic *no*', appears in both exclamatives and interrogatives. In this paper we argue that, in addition to contributing the ordinary meaning of negation, clitic *no* triggers a characteristic scalar implicature (Sections 2 and 3).[1] The rest of the paper pursues the hypothesis that the semantic contrast between exclamatives and interrogatives interacts with clitic *no*'s implicature to make its negativity hard to detect in the former but not in the latter. Note that we will not identify clitic *no*'s implicature with expletive negation. Rather, we argue that clitic *no*'s implicature interacts with the meaning of exclamatives in such a way as to create the effect that goes under the name of 'expletive negation'. First we study the syntactic distinction between the two constructions (Section 4), and then we turn to a more formal presentation of their meanings and that of clitic *no*. At this point we are in a position to derive the fact that clitic *no* in an exclamative construction appears to be 'expletive negation' (Section 5).

2   Pre-Verbal Negative Markers and Verb Movement

Paduan exhibits 'subject clitic inversion', i.e. the phenomenon by which a subject clitic that precedes the verb in linear order in non-interrogative clauses follows the verb in matrix interrogative clauses (cf. Benincà 1994, Poletto 1993a, 1993b, among others).[2] The examples in (3) and (4) exemplify the contrast in the position of the subject clitic with respect to the verb in these contexts, by means of an unaccusative and a transitive verb, respectively:

(3)   a. El   vien.
          s.cl comes
          'He is coming.'
       b. Vien-lo?   (*El vien?)
          comes-s.cl
          'Is he coming?'
       c. Quando vien-lo?   (*Quando el vien?)
          when   comes-s.cl
          'When is he coming?'
(4)   a. La ga   magnà tuto.
          s.cl has eaten   everything
          'She ate everything.'

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[1]This part of our paper closely reflects the content of Portner and Zanuttini (1996), where the scalar implicature of clitic *no* is first identified.

[2]In our glosses, 'subject clitic' is abbreviated as 's.cl'.

     b. Cossa ga-la   magnà? (*Cossa la ga magnà?)
       what has-s.cl eaten
       'What did she eat?'

Interestingly, though subject clitic inversion is obligatory in matrix interrogative clauses, it yields ungrammaticality in the presence of pre-verbal *no*:

(5) a. *No vien-lo?
      neg comes-s.cl
      'Isn't he coming?'
    b. *Cossa no ga-la   magnà?
      what   neg has-s.cl eaten
      'What didn't she eat?'

Paduan employs two different strategies to form negative interrogative clauses, depending on whether they are yes/no or wh questions.

    Negative yes/no questions simply exhibit the same word order as non-interrogative clauses:

(6) a. No (e)l vien?
      neg s.cl comes
      'Isn't he coming?'
    b. No la ga magnà?
      neg s.cl has eaten
      'Hasn't she eaten?'

Viewing subject-clitic inversion as the result of verb movement, it could be suggested that whatever triggers verb movement in yes/no questions is 'suspended' when they are negative; that is, that the syntactic requirements on negative and those on non-negative yes/no questions are different. We propose, instead, that the requirement which triggers verb movement in non-negative yes/no questions (cf. Rizzi 1990, 1996, Grimshaw 1997, Chomsky 1995, among others) can be satisfied by the negative marker in their negative counterpart. Assume the verb moves to C° in non-negative yes/no questions. Following Zanuttini (1997) we propose that, in negative yes/no questions, the negative marker moves to C° instead of the verb; this makes movement of the verb unnecessary. Analyzing the negative marker as an element which can move to C° instead of the verb requires that we view it as the head of a functional projection of its own, different from the one in which the verb occurs. In this we follow much of the literature that has examined the syntactic status of Romance pre-verbal negative markers which by themselves can negate a clause, like Italian *non* and Spanish *no* (cf. Laka 1990, Zanuttini 1991, among others).

    In contrast with yes/no questions, negative wh questions employ a cleft construction, as exemplified in (7):
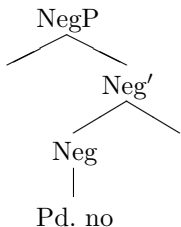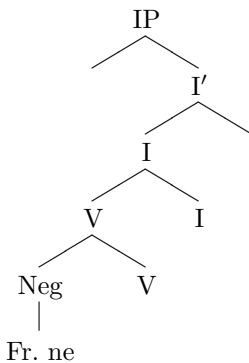
(7)   Cossa ze che   no   la   ga   magnà?
           what   is that neg s.cl has eaten
           'What didn't she eat?'

We account for this behavior by assuming that the wh phrase is required to be in the specifier of a projection whose head is filled by the verb and not by the negative marker, presumably due to feature incompatibility.

     The behavior of Paduan *no* just described contrasts with that of French *ne*, or Walloon *nu* (example (8)b from Remacle 1952), which do not block subject clitic inversion, as exemplified by the examples in (8):

(8)   a. *N'est*-il   pas heureux? (French)
         neg-is-he neg happy
         'Isn't he happy?'
      b. *N'è-c'*   nin come dès   cantikes ou cwè? (Walloon)
         neg-is-it neg like   some hymns   or what
         'Isn't it like hymns or what?'

This difference can be captured by saying that Paduan *no* is an independent syntactic head, the head of the functional projection in which it occurs (call it NegP). In contrast, French *ne* and Walloon *nu* are adjoined to the same head to which the verb is adjoined (I⁰, for simplicity); in this we follow the proposal in Pollock (1989) for French *ne*. When the negative marker is on the same head as the verb, it moves to C⁰ along with it. The syntactic representations for Paduan *no* and French *ne* are schematically given in (9):

(9)   a.

                NegP
                   Neg′
              Neg
             Pd. no

    b.

                IP
                   I′
               I
            V   I
        Neg   V
       Fr. ne

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Let us call the negative markers adjoined to the same head as the verb 'clitic negative markers', for ease of reference.

In contrast with the impossibility of subject clitic inversion observed in (5) above, there are four contexts in Paduan which exhibit subject clitic inversion despite the presence of the pre-verbal negative marker (cf. Benincà and Vanelli 1982, Benincà 1996). Let us mention all four of them here, though our investigation focuses on the first two:

1. Negative exclamatives introduced by a wh phrase:

   (10) a. Chi *no* invitarisse-lo par parere   importante!
          who neg invite-s.cl   for to-seem important
          'What people he would invite in order to seem important!'
        b. Cossa *no* ghe dise-lo!
          what neg him say-s.cl
          'What things he's telling him!'

   These sentences are used to convey that he would invite all sorts of people in order to feel important, and that he would tell him all sorts of things. Anyone who wasn't invited, or anything that wasn't said, is so unlikely or implausible that it does not deserve consideration.

2. *Why* questions which convey suprise or dismay:

   (11) a. Parcossa *no* ve-to   anca ti!?
          why   neg go-s.cl also you
          'Why aren't you going as well?'
        b. Parcossa *no* ghe-to   acetà?
          why   neg have-you accepted
          'Why didn't you accept?'

   These sentences contrast with the example of wh questions in (7) above, as well as with those instances of questions with *parcossa* used to request information, cf. (12). In both cases a cleft is required:

   (12) a. Parcossa ze che *no* te   ve anca ti?
          why   is that neg s.cl. go also you
          'Why aren't you going as well?'
        b. Parcossa ze che *no* te ghe acetà?
          why   is that neg s.cl have accepted
          'Why didn't you accept?'

   Whereas the questions in (12) are asking for the reasons why the hearer is not going, or has not accepted something, those is (11) are used when the speaker knows the hearer is not going, or has not accepted something, and wants to convey his belief that there are no valid reasons for that.

3. In yes/no questions of the type of (13), or those where *no* co-occurs with the post-verbal negative marker *miga*, as in (14):

(13)   Vien-lo   o *no* vien-lo?
       comes-s.cl or neg comes-s.cl
       'Is he coming or isn't he?'

(14) a. *No* vien-lo   miga?
        neg comes-s.cl neg
        'He's not coming??'

   b. *No* lo ghe-to   miga fato?
      neg it have-s.cl neg   done
      'You haven't done it??'

Example (13) is used when the speaker has the impression that he's not coming and expresses impatience, implying that he was supposed to come. The examples in (14) are used when the speaker knows that he's not coming, or that the hearer has not done it, and wants to convey that this was contrary to expectation (cf. Cinque 1976 on Italian *mica*).

4. Finally, a fourth context is that of non-wh exclamative clauses, such as (15):

(15)   *No* ga-lo   magnà tuto!
       neg has-s.cl eaten   everything
       'He's eaten everything!'

Suppose the speaker is talking about a child who does not usually eat much; if, at some particular time, the child eats everything, sentence (15) can be uttered felicitously. It conveys the idea that the fact that he ate everything is very surprising.

Following the reasoning previously applied to French and Walloon, we suggest that in these four contexts Paduan *no* co-occurs with subject clitic inversion because it is on the same head as the verb, and thus moves to C° along with it. That is, in contrast with the previous examples where *no* was the head of an independent syntactic projection (as in (9)a), in these contexts Paduan *no* is adjoined to the same head as the verb (as in (9)b). We will refer to it as 'clitic *no*'.

These data show not only that it is possible for some languages to have a pre-verbal negative marker which is a clitic, while others have one which is an independent syntactic head, but also that a single language can exhibit both types of negative marker.[3] Why would

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[3]In fact, a closely related dialect, Basso Polesano, spoken in the Po River delta, has morphologically distinct forms of negation in ordinary assertions and constructions of the type (14)a:

(i) A   *no* vegno. (Basso Polesano)
     s.cl neg come

     'I am not coming!'

(ii) *Ne* vien-lo   mina?
     neg comes-s.cl neg

a language allow such apparently needless complexity in its grammar? We argue that, in Paduan, this syntactic difference corresponds to a semantic difference:

- the *no* which heads its own projection contributes the ordinary interpretation of negation;

- clitic *no*, in addition to contributing the ordinary meaning of negation, also generates a characteristic scalar implicature.

In Section 3 we will provide an informal characterization of clitic *no*, which will then be formalized in Section 5.

3   The Contribution of Clitic *no*

In this section we attempt to make two preliminary semantic points. First, we aim to provide a semantic criterion for distinguishing exclamatives and interrogatives. Our claim is that the former are factive while the latter are not. Then we argue in an informal way that in every instance clitic *no* utilizes a pragmatic scale associated with its clause to generate a characteristic scalar implicature. This provides semantic support for our conclusion in Section 2 that there is a distinct clitic form of *no* in Paduan. Later, in Section 5, we will make these claims more precise.

3.1   *Factivity*

In general it is difficult to know how to distinguish exclamatives and interrogatives. The criterion we will work with is a semantic one: we classify a sentence as an interrogative if it can have an answer, even when this answer is merely rhetorical. In Section 4, we will attempt to locate a syntactic correlate of this semantic difference.

(16)   Why aren't you going as well?
        Because I have a paper cut on my thumb.
(17)   Is he coming or not?
        Yes, he's coming.

(18)   Didn't he eat everything! (with appropriate intonation)
        #Yes he ate everything.
(19)   What didn't he tell him!
        #He didn't tell him he committed a murder.

        'Isn't he coming?'

However, we are not certain of the precise distribution of these elements in the other contexts we discuss.

This difference can be explained if we accept Grimshaw's (1977) claim that exclamative clauses are factive. For example, if (18) presupposes that he ate everything, it makes no sense to provide the information that he did.

It is worth going over briefly the arguments that exclamatives are indeed factive, given that they may sometimes be used to convey new information in a conversation.[4] For example, suppose the day is cold and rainy (in a place where we may expect better), and someone enters the room saying (20):

(20)   What a wonderful day!

The speaker may thereby convey that something wonderful has happened to him or her. If we are to maintain that exclamatives are factive, it is necessary to consider this a case of presupposition accommodation, akin to (21) in a situation where the hearer hasn't looked outside all day:

(21)   It stopped raining just as I left for work.

While it is possible to maintain that exclamatives are factive, given that we may appeal to accommodation in such cases, we should have some positive arguments for the presupposition in question before we accept the added complexity of postulating a process of accommodation.

Grimshaw presents two arguments for the factivity of exclamatives. The first is that only factive predicates may embed them. Consider the following (all the data below are from Grimshaw 1977):

(22) a. It's amazing what a fool Bill is.
      b. John realized what a big mistake he had made.
      c. I can't believe how stupidly he's behaving.
(23) a. *It's possible what a fool Bill is.
      b. *John thought what a big mistake he had made.
      c. *Bill believes how stupidly John is behaving.

The contrast between *I can't believe* and *Bill believes* is quite revealing, in that the former represents an idiosyncratic factive use of *believe*, as in (24) (Grimshaw's (140)):

(24)   I can't believe that he really did it.

The contrast in (22)–(23) can be explained if we note, following Grimshaw, that nonfactive predicates do not merely fail to presuppose their complements, but rather are incompatible with their complement's being presupposed. This lets Grimshaw explain why nonfactive predicates cannot occur with *the fact that*, as noted by Kiparsky and Kiparsky (1970):[5]

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[4]This fact was pointed out to us by Larry Horn.

[5]Note that this does not require that the context not entail the complement. One could say *Mary believes that it's raining* in a context in which it is known to be raining. The point, as Grimshaw emphasizes, is that

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(25)   *I assert the fact that I don't intend to participate.

An exclamative is similarly incompatible with a nonfactive predicate.

Grimshaw's other argument comes from the fact that it is impossible to use an exclamative to answer a question:

(26)   Question: How tall is John?
        Response: #How tall John is!

If the response asserted that John is quite tall, (26) should be an acceptable exchange. Grimshaw notes that it is generally impossible for a response to a question to presuppose an answer to the question:

(27)   Question: Did Bill leave?
        Response: #It's odd that he did.

It we assume that exclamatives are factive, (26) falls into the same pattern as (27).

In addition to these arguments provided by Grimshaw, one might hope to be able to apply some of the classic tests for presupposition to exclamatives. These involve placing the constituent in question into a construction which will affect entailments but which acts as a hole for presuppositions: negation, modal contexts, *if* clauses, etc. In fact, Grimshaw's first argument can be seen as a variant of the 'modal context' strategy, though as we have seen the argument which results is a bit more involved than is usually the case. Other constructions, such as *if*, are unavailable with exclamatives. The case of negation is quite interesting in relation to our project, however. It seems that, if the propositional content of an exclamative is presupposed, we would expect a negative exclamative to share the presupposition of the same sentence without negation—and, at least at first glance, this is what we find: negative exclamatives convey more or less the same thing as their positive counterparts. For instance, (18) describes a situation in which he *did* eat everything. We propose that this is a significant part of the explanation for why negation in exclamatives appears 'expletive'. Of course the idea that there really is no such thing as meaningless, expletive negation is precisely what we wish to argue for, so we should be careful of using this as an argument for our position. Still, it is important to note that, if exclamatives are factive, we would expect positive and negative ones not to differ in meaning to the extent that their meaning resides in presuppositions.

3.2   *Scalar Implicature*

Our next goal is to show that clitic *no* in Paduan is associated with a uniform interpretation which distinguishes it from ordinary negation in this language. This interpretation takes the form of a scalar conventional implicature similar to that generated by *even*. In this section

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neither *it's raining* nor the sentence as a whole has a reading presupposing that it's raining.

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we will only outline the nature of this implicature in an informal way; later in Section 5, once we have come to a more detailed understanding of the syntax of the constructions at issue, we will provide a more precise, formal version. The present level of detail should be enough to motivate the semantic uniformity of clitic *no*.

Suppose that a sentence containing clitic *no* is associated with a set of alternative propositions C. The use of clitic *no* also requires that the elements of C be ordered according to a scale:

(28)   Scale $= \langle p_1 \prec p_2 \prec \ldots \prec p_n \rangle$

In such a circumstance, our proposal is that clitic *no* generates an implicature that only the lowest ('leftmost') members of this scale are true.[6] We will proceed by considering the sentence types containing clitic *no* in order to see what sort of scale must be associated with each if we are to produce the right implicature. In Section 5 we will discuss the difficult problem of how to be sure the needed scale is available in all cases.

3.2.1   *Wh Exclamatives*

(29)   Cossa no ghe dise-lo!
        what neg him says-s.cl
        'What things he's telling him!'

This sentence implicates that he told him all sorts of unexpected things; whatever he didn't tell him must be so unlikely or implausible that it hardly deserves consideration. In other words, we are considering alternative propositions of the form 'he didn't tell him x'. If we take the contextually salient propositions of this form to be those in (30), the scale in (31) will be appropriate. With respect to this ranking, we will be able to say that *no* implicates that only the lowest ranked proposition(s), e.g. only 'he didn't tell him he committed a murder', is/are true.

(30) $C = \{$'he didn't tell him he committed a murder', 'he didn't tell him he is having trouble in his marriage', 'he didn't tell him he dislikes his neighbor', 'he didn't tell him it is a nice day outside'$\}$

(31)   Scale $= \langle$ 'he didn't tell him he committed a murder' $\prec$ 'he didn't tell him he is having trouble in his marriage' $\prec$ 'he didn't tell him he dislikes his neighbor' $\prec$ 'he didn't tell him it is a nice day outside ' $\rangle$

Notice that all of the alternatives in C here are negative. This reflects the fact that *no* is semantically a real negation. However, by implicating that only the extreme 'he didn't tell him he committed a murder' is true, (29) conveys the fact that he did tell him many things, including the surprising proposition that he is having trouble in his marriage.

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[6]In fact, it may be that none of the alternatives are true. Our formalization of this implicature will allow for this possibility.

This proposal for how (29) ends up being about the fact that he *did* tell him unexpected things is quite similar to the approach of Meibauer (1990) to similar facts in German:

(32) a. Was du   *nicht* alles machst! (German)
       what you neg   all   make
       'What things you have made!'
     b. Was du   alles machst!
       what you all   make
       'What things you have made!'

Meibauer notes first that both examples presuppose that the addressee makes a lot of things; this point is in accord with our discussion of the last subsection, though he does not relate the fact to the presupposition hole properties of negation. The two sentences differ, according to Meibauer, only in whether the speaker calls attention to the things he has not made (which are few in (32)a) or the things he has made (which are many in (32)b). This analysis of (32)a parallels our claim that (29) implicates that the things he doesn't tell him are low on the contextual scale. Our formation in terms of a scale seems superior, however, since, for example, (29) could not be used if he simply failed to tell him one insignificant proposition ('my nose itches') out of a set of them ({'my nose itches', 'it's a nice day outside', 'I like the color blue'}).

Most of Meibauer's discussion focuses not on wh exclamatives, but rather on yes/no, and to some extent wh, rhetorical questions. His approach to explaining away apparent cases of expletive negation in pragmatic terms is philosophically quite close to ours. However, his presentation is not embedded in a precise semantic/pragmatic theory, nor does it take detailed account of the syntax of exclamatives and interrogatives. We hope that the present paper can be an improvement in these regards.

3.2.2 Why *Interrogatives*

Next we can look at the *why* interrogative (33). Recall that this sentence can be used when it was thought that the hearer would or should go, even though now we know that he or she won't:

(33)   Parcossa no ve-to   anca ti?
       why   neg goes-s.cl also you
       'Why aren't you going as well?'
(34)   Scale = ⟨ 'you aren't going as well because you have a hangnail' ≺ 'you aren't going as well because you're feeling a little sleepy' ≺ 'you aren't going as well because you are ill' ⟩

With a scale like this one, the sentence may implicate that the only reason the hearer has for not going is that he or she has a hangnail. This is a very bad reason for not going, representing the fact that the failure to go is a source of surprise or dismay. In Meibauer's

terms, we focus on how few are the reasons the hearer has for not going.

Though this paper only aims to explain in detail the apparent differing force of negation in wh exclamatives and wh interrogatives, in the next sections we would like to discuss in a preliminary way the operation of clitic *no* in yes/no constructions too. Doing so provides support for our claim that clitic *no* has a uniform semantics.

3.2.3   *Yes/No Exclamatives*

Example (35) is used when he has eaten everything, but this is contrary to expectation. The scale (36) describes this fact:

(35)   No ga-lo   magnà tuto!
       neg has-s.cl eaten   everything
       'He's eaten everything!'

(36)   Scale = ⟨ 'he ate everything' ≺ 'he didn't eat everything' ⟩

If the scale (36) is interpreted as a likelihood ranking, (35) implicates that his eating everything was not expected.

3.2.4   *Yes/No Interrogatives*

This case is quite similar to the preceding one. If context provides the scale (38), either (37)a or (37)b will implicate that, though we thought that he was coming, he is not:

(37) a. Vien-lo   o no vien-lo?
        comes-s.cl or neg comes-s.cl
        'Is he coming or is he not coming?'

     b. No vien-lo   miga?
        neg comes-s.cl neg
        'He's not coming??'

(38)   Scale = ⟨ 'he isn't coming' ≺ 'he is coming' ⟩

To summarize the content of Section 3:

- Exclamatives cannot be answered; they are factive.

- Clitic *no* generates an implicature that only the lowest members of the scale are true.

4 Wh Exclamatives and Wh Interrogatives

In the previous section we have divided inversion structures into two classes and proposed that wh exclamatives are factive, whereas wh questions non-factive. Since we have formulated this distinction on semantic grounds, we should now ask whether it is possible to find a syntactic correlate of this semantic distinction. We will devote this section to exploring this question.

Our discussion will be organized as follows. First we distinguish between exclamative clauses which can be viewed as nominal structures and those which are best treated as clausal structures; our discussion will focus on the latter class. Then we introduce our hypothesis concerning the syntactic difference between exclamative clauses and questions, discussing its theoretical basis and the empirical evidence on which it rests.

4.1 *Nominal and Clausal Exclamatives*

The difference between exclamatives and questions we have been observing could be related to their categorial status: whereas questions are clausal constructions, exclamatives could be nominal constructions instead. This possibility can be illustrated by observing that the English counterparts of some of the examples we have been studying can be a nominal construction, as shown by the following translations:

(39) a. Chi no   invitaresse-lo par parere   importante!
who neg invite-s.cl   for to-seem important

'The people who he would invite to appear important!' (NP and relative clause)
'What people he would invite to appear important!' (free relative)

b. Cossa no ghe dise-lo!
what neg him says-s.cl

'The things which he's telling him!' (NP and relative clause)
'What things he's telling him!' (free relative)

A difference along these lines is argued for in Elliott (1974) for the case of English. His work provides several arguments showing that, in English, questions and exclamatives are syntactically different. The differences noted there can be rephrased by saying that whereas questions are clausal structures, exclamatives are either NPs or constructions which have the distribution of NPs (free relatives).

The question then arises of whether the Paduan examples which we have treated as clausal constructions involving wh movement should be analyzed instead as free relatives introduced by 'what' and 'who' respectively. We argue that such a possibility should be excluded for the following reasons.

First, free relatives introduced by *chi* 'who' in Paduan obligatorily show the complementizer *che*, as shown in the pseudo-cleft below:

(40)   Chi *(che) ga   kopà el   giardiniero ze Mario.
         who that   has killed the gardener   is Mario
         'Who killed the gardener is Mario.'

Since no complementizer is present in (39)a, we conclude that it cannot be the same kind of construction as the free relative exemplified in (40).

Second, Paduan does not allow free relatives introduced by *cossa* 'what'; instead, the presence of an overt nominal (*quelo* 'that, the one') is obligatory, followed by the complementizer *che*:

(41) a. *Cossa che te   ghe dito ze falso.
        what   that s.cl have said is false
     b. Quelo che te   ghe dito ze falso.
        that   that s.cl have said is false
        'What you said is false.'

Since in (39)b there is no overt nominal and the construction is introduced by *cossa*, we conclude that it cannot be a free relative.

On the basis of this evidence we conclude that the sentences in (39), the core examples of our analysis, cannot be free relatives.

Further support for the clausal status of exclamatives in the examples we are considering can be gained by examining other exclamative constructions in Paduan. In particular, we will look at several others which one might think should be analyzed as nominal to determine whether they are cases of NPs followed by a relative clause or clauses where a constituent has been fronted through a movement operation. We will see that simple NPs may indeed function as exclamations, but all those with an initial wh phrase are better treated as clausal.[7]

Given appropriate intonation, an NP without a wh word can be used as an exclamation:

(42) a. I   libri che el   leze!
        the books that s.cl reads
        'The books he reads!'
     b. La malinconía che me fa   sta musica!
        the melancholy that me makes this music
        'The melancholy this music gives me!'

These cases indeed apppear to be nouns followed by a relative clause.

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[7]In this discussion, we are only concerned with cases where the exclamative clause contains a tensed verb and we are leaving aside those where the verb is infinitival (such as the counterparts of 'What a lot of books to read!'). For a discussion of the differences between tensed and infinitival exclamatives in Italian, see Radford (1982).

Next we turn to exclamatives introduced by a complex wh phrase.[8] Let us extend to Paduan the tests first applied to Italian in Radford (1982) to establish the categorial status of wh exclamatives. They reveal that certain types of wh exclamatives cannot be nominal but must be clausal in nature.

All relatives with the complementizer *che* must be headed by a noun and cannot be headed by an element which belongs to another syntactic category. However, exclamatives where the fronted constituent is headed by an adjective, an adverb or certain PPs co-occur with the complementizer *che*:

(43) a. Che bravo *che* te si!
         what good that s.cl are
         'How good you are!'
     b. Che ben *che* la canta!
         what well that s.cl sing
         'How well she sings!'
     c. Che zo   de morale *che* el   ze!
         what down of morale that s.cl is
         'How down he is!'

Based on this, we conclude that these constructions cannot be relative clauses.

A similar case is that of exclamatives in which a PP has been pied-piped to the front of the clause:

(44) a. Co quanta   zente che el ga barufà!
         with how many people that s.cl has quarreled
         'So many people he has quarreled with!'

The presence of pied-piping makes them similar to questions, where pied-piping of a PP is obligatory:

     a. Co quanta   zente ga-lo   barufà!
         with how many people has-s.cl quarreled
         'How many people has he quarreled with?'

In contrast, if the exclamative were a relative clause, we would expect an NP in clause-initial position, followed by the complementizer *che*, as in the example below:[9]

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[8]All the examples are from Benincà (1996).

[9]We are grateful to P. Benincà for providing us this example. Note that Paduan, in contrast to Italian, does not employ relative pronouns as the object of a preposition (e.g. the counterpart of English 'with whom, to whom'). Rather, relative clauses always consist of an NP followed by the complementizer *che*; when the preposed NP is the object of a preposition, it appears without the preposition, as in example (45); in some cases the clause contains a resumptive pronoun.

(45) Conosso la zente *che* el ga barufà.
      know   the people that s.cl has quarreled
      'I know the people that he quarreled with.'

Another type of wh exclamative which cannot be nominal in nature is that containing a preposed constituent and an instance of clitic *no*, exemplified in (46):

(46) a. Quanta   confuzion *no* ghe-to   fato!
        how much confusion neg have-s.cl made
        'How much confusion you made!'
     b. Quanti   libri *no* lezi-to!
        how many books neg read-s.cl
        'How many books you read!'

In such cases, the presence of the complementizer *che* yields ungrammaticality:[10]

(47) a. *Quanta confuzion *che no* ghe-to fato!
     b. *Quanti libri *che no* lezi-to!

Since the presence of *che* is obligatory in relative clauses in Paduan, the examples in (46) cannot be head nouns followed by a relative clause.

Yet another type of wh exclamative which cannot be analyzed as an NP is that found with verbs which cannot take NP complements, but only PP or clausal complements. One example of such a verb is 'to think':[11]

(48) a. Pensa quanta   pasiensa che el ga vuo!
        think how much patience that s.cl has had
        'Think about the patience he has had!'
     b. Pensa tí   quanta   zente che ghemo incontrà!
        think you how many people that have   met
        'Think about how many people we have met!'

---

[10]The presence of *che* in these examples would yield ungrammaticality even in the absence of subject-verb inversion (cf. Benincà 1996:35):

(i) *Quanta   confuzion *che* no te ghe fato!
     how much confusion that neg s.cl have made

     'How much confusion you made!'

(ii) *Quanti   libri *che* no te lezi!
     how many books that neg s.cl read

     'How many books you read!'

[11]As in English, in Paduan as well this verb can only take an NP as its complement if it is a cognate object.

Given the grammaticality of these examples, we must conclude that the complement of the verb is a clause and not an NP.

Finally, it is difficult to determine the categorial status of exclamatives introduced by a complex wh phrase which is an NP, followed by the complementizer *che*:

(49) a. Che malinconía che me fa sta musica!
what melancholy that me makes this music
'The melancholy this music gives me!'

b. Che libri che el leze!
what books that s.cl reads
'The books he reads!'

Sentences of this type could indeed be NPs followed by a relative clause. However, given the fact that all the other types of exclamatives introduced by a wh phrase are clausal, it is plausible to assume that these are as well.

This discussion leads us to conclude that, at least in those cases introduced by a wh constituent, exclamatives in Paduan should be viewed as clausal structures. Such cases include the core cases of our analysis, i.e. exclamatives introduced by a wh word alone (e.g. *chi, cossa*); they also include finite wh exclamatives where the clause initial constituent is not an NP, finite wh exclamatives with an instance of clitic *no*, and finite wh exclamatives which can occur as complements of verbs which select for clausal complements. In the following, we will begin to analyze the structure of clausal exclamatives by focusing on a few core cases.[12]

4.2 *On the difference between interrogatives and exclamatives*

Focusing now on the wh exclamatives which have clausal status, we should ask whether they exhibit properties the same as, or different from, those shown by interrogatives. Both types of construction involve constituents introduced by a wh word. They both involve movement of the wh constituent to the front of the clause.[13] They differ in the following respects:

1. Interrogatives and exclamatives in Paduan differ in the linear order of the wh phrase with respect to left-dislocated constituents, as discussed in Benincà (1996). Wh constituents in interrogatives can follow, but cannot precede, left-dislocated elements, as shown in the following examples:

(50) a. A to sorela, che libro vorissi-to regalar-ghe?
to your sister, which book want-s.cl give-her

---

[12]Distributional tests which argue for the clausal status of finite wh exclamatives in Italian are provided in Battye (1983:Ch.4, §2.1).

[13]Analyzing wh exclamatives in Italian, Radford (1983) provides arguments showing that the wh word in the fronted XP is part of the constituent which has moved and that exclamatives involve movement. Battye (1983:Ch.4, §2.2) also provides evidence for the existence of wh movement in finite wh exclamatives in Italian. The same arguments can be reproduced for Paduan.

'To your sister, which book would you like to give her as a gift?

    b. *Che libro, a to sorela, vorissi-to regalar-ghe?

(51) a. To   sorela, a chi la ga-li   presentà?
       your sister, to who her have-s.cl introduced

       'Your sister, to whom have they introduced her?

    b. *A chi, to sorela, ghe la ga-li presentà?

In contrast, complex wh constituents in exclamatives may precede the left-dislocated element:[14]

(52)   Che bel libro, a to   sorela, che i   ghe ga   regalà!
       what nice book, to your sister, that s.cl her have given

       'What a nice book, to your sister, they gave her as a a gift!'

(53)   In che bel posto, to   fjolo, che te lo   ga   mandà!
       in what nice place, your son, that s.cl him have sent

       'In what a nice place, your son, you sent him!'

Benincà (1996:41) summarizes the relative position of these elements (which include hanging topics in her discussion) as follows:

(54)   Wh exclamative - Left dislocation - Wh interrogative

2. Interrogatives and exclamatives in Paduan differ with respect to their co-occurrence with the complementizer *che* in matrix contexts. A wh constituent in an exclamative lacking clitic *no* co-occurs with the complementizer *che*:

(55) a. Cossa *che* l   magnava!
       what that s.cl ate

       'What things he ate!'

    b. Dove *che* l   ze nda vardare!
       where that s.cl is gone to-look

       'The places he went to look!'

    c. Chi *che* (no) l   ga fato inrabiare!
       who that (neg) s.cl has made to get angry

       'The people he made angry!'

---

[14]This pattern is only possible when the wh constituent is complex and the construction includes *che*. Simple wh constituents may not precede a left-dislocated element, nor can left-dislocation in general separate a wh constituent from clitic *no*:

(i)   *Cossa, a to   sorela, che i   ghe ga   regalà!
      what,   to your sister, that s.cl her have given

      'What, to your sister, they gave her as a a gift!'

(ii)   *Che bel libro, a to   sorela, no i   ghe ga   regalà!
      what nice book, to your sister, neg s.cl her have given

      'What a nice book, to your sister, they gave her as a a gift!'

We hope to show that these differences are due to other factors, and do not undermine our analysis of exclamatives.

In contrast, co-occurrence of the wh phrase and the complementizer *che* is never possible in matrix interrogatives:[15]

(56) a. *Cossa *che* l   magnava?
        what   that s.cl ate
        'What did he eat?'
     b. *Dove *che* l   ze nda vardare?
        where that s.cl is gone to-look
        'Where did he go look?'
     c. *Chi *che* l   ga fato   inrabiare?
        who that s.cl has made to get angry
        'Who did he make angry?'

The contrast between exclamatives and interrogatives with respect to the ability to co-occur with the complementizer holds both when the wh phrase is simple and when it is complex. The following set of examples shows that a complex wh constituent in an exclamative co-occurs with the complementizer *che*:

(57) a. Che libro *che* te lezi!
        what book that s.cl read
        'What a book you are reading!'
     b. Quanto   late *che* te ghè comprà!
        how much milk that s.cl have bought
        'How much milk you bought!'
     c. Quanta   confuzion *che* te ghe fato!
        how much confusion that s.cl have made
        'How much confusion you've made!'

In all these examples, the intonation rises on the wh constituent preceding the complementizer and then descends.

In contrast, the following set of examples shows that a complex wh constituent in a matrix question cannot co-occur with the complementizer *che*:

(58) a. *Che libro *che* te lezi?
        what book that s.cl read
        'What book are you reading?'
     b. *Quanto   late *che* te ghe comprà?
        how much milk that s.cl have bought
        'How much milk did you buy?'
     c. *Quanta   confuzion *che* te ghe fato?
        how much confusion that s.cl have made
        'How much confusion have you made?'

---

[15]The contrast disappears in embedded clauses, since both embedded questions and embedded exclamatives are introduced by the complementizer *che*.

Well-formed wh questions obligatorily have the wh phrase, whether simple or complex, immediately followed by the verb, in turn followed by the interrogative subject clitic. The examples in (59) show matrix questions with a simple wh word, those in (60) matrix questions with a complex wh word. These examples contrast with (56) and (58) respectively.

(59) a. Cossa magnava-lo?
        what ate-s.cl
        'What did he eat?'
     b. Dove ze-lo nda vardare?
        where is-s.cl. gone to-look
        'Where did he go look?'
     c. Chi ga-lo fato inrabiare?
        who has-s.cl made to get angry
        'Who did he make angry?'
(60) a. Che libro lezi-to?
        what book read-s.cl
        'What a book you are reading!'
     b. Quanto late ghe-to comprà?
        how much milk have-s.cl bought
        'How much milk you bought!'
     c. Quanta confuzion ghe-to fato?
        how much confusion have-s.cl made
        'How much confusion you've made!'

These examples differ from the ones where the complementizer is present ((55) and (57)) in having a continuous rising intonation.

Both the examples with a wh phrase followed by a complementizer ((55) and (57)) and those with a wh phrase followed by subject clitic inversion ((59) and (60)) can be used to express the pragmatics of exclamatives, namely that something is surprising or worth noticing. But, we argue, the former have distinct syntactic properties from the latter. In addition to the presence/absence of the complementizer *che* and to their intonational differences, the sentences in (55) and (57) on the one hand and those in (59) and (60) on the other also differ on the basis of the answerability criterion mentioned in Section 3. As confirmed to us by P. Benincà (p.c.), the sentences in (59) and (60) can have an answer (perhaps in the form of a comment or of an explanation), whereas those in (55) and (57) cannot. For example, it is possible to answer (60)a by indicating the kind of book; but a similar answer to (57)a would be infelicitous. Similarly, one can answer (60)c (perhaps jokingly) with 'Not much, if you think about what happened'. In contrast, the same sentence uttered in reply to (57)c would be infelicitous.

Because the presence of the complementizer and the descending intonational pattern go hand-in-hand with the lack of a possible answer, we propose that only the former set of sentences should be viewed as exclamatives proper; the latter are syntactically inter-

rogatives, though they can be used to express surprise, a pragmatic function associated with exclamations.

The need to distinguish the two constructions is further shown by the distribution of constituents like adjectival phrases or adverbial phrases. In Paduan, the wh word *che* 'what' can co-occur with an adjective (e.g., *che belo* 'how beautiful') only in exclamatives but not in interrogatives; in the latter, *quanto* 'how much, how many' must be used (e.g., *quanto belo* 'how beautiful'). If we try to insert such a constituent in the two sets of examples given above, we see that *che* followed by an adjective is possible only in the first set of cases, but not in the second:

(61) a. Che belo   *che* te si!
        what beautiful that s.cl are
        'How beautiful you are!'
     b. *Che belo   si-to?
        what beautiful are-s.cl

On the other hand, the sequence *quanto* - adjective, which is ordinarily used in questions, can only be employed in the second of the two strategies exemplified above when used to express surprise:

(62) a. *Quanto belo   che te si!
        how much beautiful that s.cl are
     b. Quanto   belo   si-to?
        how much beautiful are-s.cl
        'How beautiful you are!'

The fact that the sequence *che*-adjective can only occur followed by the complementizer, whereas *quanto*-adjective can only be followed by subject clitic inversion provides support for our proposal that the former is an exclamative clause whereas the latter an interrogative. The other two criteria also apply as expected: (61)a has the intonation of exclamatives and cannot have an answer, whereas (62)b has the intonation of questions and can be answered (e.g. with 'very little').

3. A final difference we would like to point out concerns the obligatoriness of movement: overt movement is obligatory in exclamatives but not in interrogatives.[16] Whereas lack of movement yields ungrammaticality in exclamatives, in interrogatives it turns a wh question into an echo question (cf. Benincà 1995 for Italian).
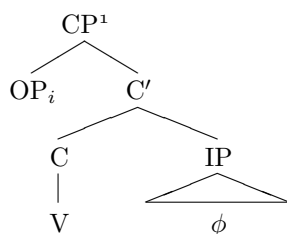
We take the similarities we have examined to suggest that interrogatives and exclamatives both involve movement of the wh constituent to a CP position. At the same time, we take the observed differences to suggest that the requirements that must be satisfied in the two cases are not identical. Recall that the difference between exclamatives and questions is that the former presuppose their propositional content. In the case of non-wh exclamatives, this

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[16]The obligatoriness of wh movement in exclamatives is found not only in Paduan, Italian and French (cf. Gérard 1980), but also in English, as pointed out in Radford's work.
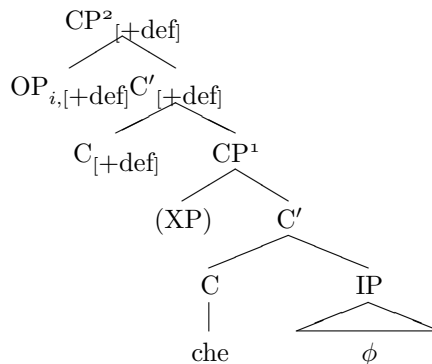
means that the truth of the proposition is presupposed (and is unexpected); in the case of wh exclamatives that, among the alternatives given by the wh phrase, there is a true alternative and it is known (and it is unexpected). In this respect, exclamatives are similar to factive complements. We will pursue the analogy between exclamatives and factives and suggest that, like factives, exclamatives involve an operator (or a feature) in a CP position which is different from the position where the wh features are found. Following the literature on factives, we suggest that the syntactic representation of exclamatives involves CP recursion: in addition to the CP where the wh word moves in questions, exclamatives have another CP which needs to be moved into.[17]

In particular, we hypothesize that exclamatives involve movement to a CP position which is structurally higher than the one involved in questions:

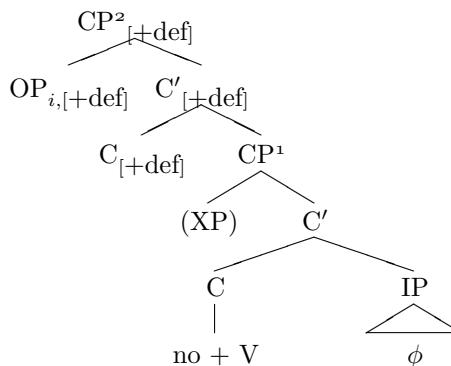(63) Questions:

$$CP^1 \;\; [\; OP_i \quad C'\; [\; C \;|\; V \quad\quad IP\; \phi\;]\;]$$

(64) a. Positive Exclamatives:

$$CP^2_{[+def]} \;[\; OP_{i,[+def]} \quad C'_{[+def]}\; [\; C_{[+def]} \quad CP^1\; [\; (XP) \quad C'\; [\; C\;|\;\text{che} \quad IP\;\phi\;]\;]\;]\;]$$

b. Negative Exclamatives:

$$CP^2_{[+def]} \;[\; OP_{i,[+def]} \quad C'_{[+def]}\; [\; C_{[+def]} \quad CP^1\; [\; (XP) \quad C'\; [\; C\;|\;\text{no} + V \quad IP\;\phi\;]\;]\;]\;]$$

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[17]An alternative way of expressing this would be in terms of different types of CP projections, along the lines of Rizzi's (1997) proposals.

These structures can explain the differences between exclamatives and interrogatives as follows.[18]

- The reason why the wh phrase in exclamatives can occur to the left of a dislocated constituent, thus contrasting with the wh phrase in interrogatives, is that the exclamative wh phrase occurs in a higher CP in the syntax. The position in which it occurs is the factive CP (CP^2) shown in (64)a. Since the wh phrase occurs in the higher of the two CP positions, there is room for another phrase–for example, a left-dislocated constituent–to occur in the specifier of the lower CP (CP^1). In contrast, in interrogatives only one CP is available, as shown in (63); since the wh phrase occurs in its specifier, there is no room for a dislocated constituent to occur between the wh phrase and the verb.

- The reason why wh phrases can co-occur with the complementizer *che* in exclamatives but not in interrogatives is that only the former have an extra CP to which the wh phrase can move: this is precisely the CP with the factive operator (CP^2) which is available in exclamatives but is not available in interrogatives. The lower C^0 is always filled, either by *che* or by *no* plus the verb; the fact that the wh phrase is in the higher projection in exclamatives allows for the presence of *che* without creating the conditions which lead to a so-called doubly-filled-COMP filter violation. In contrast, in interrogatives, where only one CP is available, the co-occurrence of a wh phrase with a C^0 filled by *che* is ruled out by whatever creates the doubly-filled-COMP effect.

- Finally, in our view the reason why movement is obligatory in exclamatives is to be attributed to properties of the higher CP (CP^2) which differ from those of the lower CP (CP^1), the one relevant in questions. In particular, we assume that the higher CP must be filled in the syntax, for reasons which need to be further explored, with the effect of forcing the wh phrase to appear in clause initial position.

5   Formalizing the Interpretation of Clitic *no*

We have seen in Section 3 that the surprise-indicating character of all sentences with clitic *no* can be expressed by associating it with a particular scalar implicature, provided that it has access to an appropriate set of alternative propositions ranked in a scale. If we examine the scales more closely, it becomes clear that we must think more carefully about their nature and source. Let us begin by looking into the contrast between wh exclamatives and wh

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[18]As pointed out to us by Gertjan Postma, Bennis (1995) and work which has been built on it by Postma (cf. Postma 1994, 1995) argue that the distinction between exclamatives and interrogatives arises from the nature of the chain headed by the wh operator. In particular, when Dutch *wat* 'what' binds a trace in an argument position, an interrogative is formed, while an adjunct trace leads to an exclamative; additionally, *wat* which is part of a complex wh phrase may yield either an exclamative or an interrogative, depending on the internal structure of the NP. These types of contrasts do not play this type of role in Paduan. English data might be more amenable to an analysis along these lines, though we feel that a distinction between nominal and clausal structure is more relevant.

interrogatives. For ease of reference, we repeat two examples below, as well as the scales we discussed in connection with them:

(65) a. Cossa no ghe dise-lo!
what neg him says-s.cl
'What things he's telling him!'

b. Scale = ⟨ 'he didn't tell him he committed a murder' ≺ 'he didn't tell him he is having trouble in his marriage' ≺ 'he didn't tell him he dislikes his neighbor' ≺ 'he didn't tell him it is a nice day outside ' ⟩

(66) a. Parcossa no ve-to anca ti?
why neg goes-s.cl also you
'Why aren't you going as well?'

b. Scale = ⟨ 'you aren't going as well because you have a hangnail' ≺ 'you aren't going as well because you're feeling a little sleepy' ≺ 'you aren't going as well because you are ill' ⟩

(67)

wh exclamative	more expected ≺ less expected
why interrogative	less expected ≺ more expected

We label the type of scale associated with the wh exclamative an *unexpectedness scale*, while that necessary for the wh interrogative is an *expectedness scale*. Since the two are opposite in this way, we cannot simply rely on context to make accessible the right kind of scale. Instead, there must be a way in which one or both of the constructions may determine the type of scale which is used. The goal of this section is to better understand how this works.

The first issue to consider is precisely what criteria are used to rank elements in the set of alternatives. Perhaps 'expectedness' is a vague enough term to cover all contingencies, but as Larry Horn has pointed out (p.c.), not just any set of alternatives ranked in this way can form a legitimate scale. For example, one would not use (65) in a context represented by (68) to indicate that he told him everything but 'Mary ate the poison but didn't get sick':

(68) Scale = ⟨ 'he didn't tell him Mary ate the poison but didn't get sick' ≺ 'he didn't tell him Susan found $100 on the street' ≺ 'he didn't tell him John bought a dog' ≺ 'he didn't tell him Bill ate an apple' ⟩

Though this scale could represent a ranking of likelihood or expectation, it is problematical because the different elements have nothing to do with one another.

A similar issue has arisen in the literature on *even* and scalar conversational implicature. Fillmore (1965),[19] for example, proposes that *even* marks a violation of expectation; however, Kay (1990) points out examples like like (69) (his (63)):

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[19]Cited in Kay (1990).

(69) A: It looks as if Mary is doing well at Consolidated Widget. George [the second vice president] likes her work.
B: That's nothing. Even Bill [the president] likes her work.

This exchange has nothing to do with how likely George and Bill are to like her work. Instead, it is possible because Bill's liking her work is a better indicator of her success at Consolidated Widget that George's.

Examples such as these have led such authors as Kay, Ducrot (1980), Anscombre and Ducrot (1983), and Hirschberg (1991) to propose systems whereby elements are ranked according to how much evidence they provide, in the conversational context in question, for some contextually relevant proposition or propositions. In the case of (69), B's assertion provides evidence that Mary is doing well at Consolidated Widget to such an extent that the president likes her work, as opposed to the lesser extent indicated by the vice-president liking her work. With our example (65), each element of the scale provides evidence that the elements to its left are true, so if he didn't tell him he is having trouble in his marriage, one would expect that he didn't tell him he committed a murder. Conversely, if he did tell him he is having trouble in his marriage, this indicates he told him that he dislikes his neighbor and that it is a nice day outside.

Though it seems that both exclamatives and *even* utilize a scale whose elements are ranked according to some type of contextually determined 'informativeness', this cannot be the full story on exclamative scales. Exclamatives do always indicate that some surprising or unexpected proposition is true. For example, (70) cannot be used in the context of (72) simply to indicate that she knows everybody, in contrast to (71):

(70) The people she knows!
(71) She even knows Larry.
(72) Scale = ⟨ 'She knows Sue, John, and Larry' ≺ 'She knows Sue and John' ≺ 'She knows Sue' ≺ 'She knows nobody' ⟩

The use of (70) must indicate that knowing Larry, and perhaps John, is surprising/unexpected. Thus it seems that exclamative scales must encode an order reflecting both 'informativeness' and 'expectedness'.

The next issue we need to face is how wh exclamatives and wh interrogatives containing clitic *no* get associated with opposite scales, as reflected in (67). In Section 4 we have investigated in some detail the syntactic contrast between exclamatives and interrogatives in Paduan. We first concluded that all of the structures we are dealing with are clausal, and not nominal, in nature. Then we argued, albeit tentatively in some cases, that exclamatives always are CP-recursion structures, with the exclamative force represented within the higher level of structure. Our ultimate goal is to understand the relationship between this structural difference and the differing scales of exclamatives and interrogatives.

In the next few sections, we will develop a system which generates for each relevant construction type—*why* interrogatives and exclamatives of various sorts—a scale appropriate for producing the correct implicature. Our attempt to systematically produce the scales is

a departure from the practice in the literature on scalar implicature and *even*, where they are simply taken as given. It is a crucial feature of our proposal that this process works quite differently in exclamatives and interrogatives, reflecting the fact that, when negation is involved, they end up with opposite orders. We would hope in the long run to work out a real theory of how the semantic content of a construction constrains or determines the sort of scale associated with it, though in the present paper we will only be able to provide intuitive motivation for the procedures which are used in the specific cases under consideration.

5.1 *Interrogatives*

We begin by looking at how the expectedness scale of *why* interrogatives is derived. Example (66) has the simple, non-CP recursion structure (63), and we propose that its scale is generated in a fairly straightforward, familiar way. First we should focus on generating the literal interpretation for this question. We will assume a Karttunen-style semantics (Karttunen 1977), so that (66) should denote the set of true propositions of the form 'he didn't go as well because of reason x'. One crucial question is how this set of propositions is formed. For reasons to become clear shortly, we follow an approach mediated by the semantics of focus, in particular the analysis of focus presented by Rooth (1992). Assume that *parcossa* is interpreted in its base position as a focused element, with a question morpheme 'Q' left behind in [spec, CP]. Rooth's theory will produce a pair of interpretations for the IP in (66): $[\![\text{IP}]\!]^o$ is the ordinary semantics value of IP, while $[\![\text{IP}]\!]^f$ is its focus semantic value, intuitively the set of propositions differing from $[\![\text{IP}]\!]^o$ in the position of the focused element(s).

The Q morpheme is a focus-sensitive element which operates on $[\![\text{S}]\!]^f$ to produce the ordinary semantic value for the question as a whole:

(73) $[\![\text{Q(IP)}]\!]^o = \{p : p \text{ is true and } p \in [\![\text{IP}]\!]^f\}$

(74) $[\![\text{Q(no ve-to anca ti } [_F \text{ parcossa}])]\!]^o =$
$\{p : p \text{ is true and } \exists a[p = \text{'you didn't go as well because of } a']\}$

Using the semantics of focus to generate the meaning of (66) is convenient because $[\![\text{IP}]\!]^f$ is the set of elements C which are ranked in the expectedness scale used by clitic *no*. This is done directly by context; i.e., we propose that expectedness is a basic pragmatic primitive which we may appeal to in scale construction. Given the set of alternatives suggested in Section 3, context might provide a scale as follows:

(75) $\text{Scale}_C = \begin{bmatrix} You\ aren't\ ...\ hangnail & \rightarrow & 1 \\ You\ aren't\ ...\ sleepy & \rightarrow & 5 \\ You\ aren't\ ...\ ill & \rightarrow & 15 \end{bmatrix}$

Here, the ranking is represented as a function from propositions to natural numbers, so that the lower the number a proposition is mapped to, the less likely it is taken to be in the context.

With this scale, clitic *no* generates the implicature in (76):

(76)   For all $p \in C$ such that p is true, $Scale_C(p) < s$

If $s = 2$, for example, (76) says that the only reason you have for not going is that you have a hangnail. In other words, the implicature is that you don't have a good reason for not going at all.

5.2   *Nominal Exclamatives*

Next we turn to scale-formation in exclamatives. The central idea behind our proposal here is the following: exclamatives are essentially about sets of alternative entities, and these entities are ranked according to how likely they are to have a property expressed by (a subconstituent of) the exclamative. This situation differs from that with interrogatives being used to express an exclamative-like meaning, since the scales there are generated directly from sets of alternative propositions.

One reason we begin with wh constructions and not the yes/no ones is the fact that in other languages, such as English, the meaning of a Paduan wh exclamative is expressed with a definite noun phrase. They therefore denote sets of individuals, we assume, a point which is in accord with our proposal that exclamatives fundamentally have to do with ranked sets of entities. If it is possible to do so, we should provide an analysis of exclamatives in general which can work for the English-type nominal constructions and the Paduan clausal ones.

Let us consider first the English exclamative (77):

(77)   The gifts that are in that bag!

Example (77) seems to simply denote the set of things in the bag (or a quantifier corresponding to this set perhaps—this difference need not concern us here). This much is suggested by the fact that a predicate like *be amazed at* seems to select for entity-denoting expressions:

(78) a. I'm amazed at those creatures.
      b. I'm amazed at the gifts that are in that bag.

As an exclamative, however, (77) generates a scalar implicature based on a scale of expectedness. The actual things which are in that bag are ranked as unexpected denizens of the bag, compared to other things which might have been in the bag. We can formalize this as follows. When we have a structure like (79), a subset of the elements in the denotation of N are ranked according to how likely they are to have the property $\lambda x_i[\phi]$.

(79)
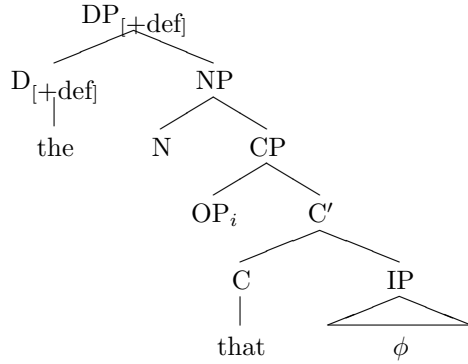
In the case of (77), this means that some set of gifts is ranked according to how likely they are to have the property $\lambda x_i[x_i \text{ is in the bag}]$. Let us suppose the ranking of entities is as follows:

(80) a. $C = \{\text{moon rock, hope diamond, chinchilla, book, apple}\}$
   b. $Scale_C =$

$$\begin{bmatrix} moon\ rock & \rightarrow & 1 \\ hope\ diamond & \rightarrow & 3 \\ chinchilla & \rightarrow & 5 \\ book & \rightarrow & 15 \\ apple & \rightarrow & 17 \end{bmatrix}$$

As a definite NP, the structure in (79) presupposes that some elements of C are indeed in the bag:

(81)   For some contextually salient $a \in C$, $\lambda x_i[x_i \text{ is in the bag}](a) = 1$

This presupposition corresponds to the 'factivity' which we have argued, following Grimshaw, that all exclamatives have.

(79) also implicates that whatever propositions of the form 'x is in the bag', with $x \in C$, are true were not expected to be true. One way to state this would be in terms of C and $Scale_C$ above, as in:

(82)   For all $a \in C$ such that $\lambda x_i[x_i \text{ is in the bag}](a) = 1$, $Scale_C(a) < s$

While this would be perfectly adequate for the English data, if we are ultimately to provide a uniform analysis of clitic *no*, it could not be transferred directly to Paduan. The reason is that the implicature of clitic *no* in *why* interrogatives operates on a set of propositions, as seen in Section 5.1. Thus, we should convert the set and scale of (80) into a set and scale of propositions. Then the implicature can be stated as in (84):[20]

---

[20]One may notice that this implicature is identical to the one in (76). This might suggest its source is

(83) a. $C' = \{$'The moon rock is in the bag', 'The hope diamond is in the bag', 'The chinchilla is in the bag', 'The book is in the bag', 'The apple is in the bag'$\}$

b. $Scale_{C'} =$

$$\begin{bmatrix} \textit{The moon rock is in the bag.} & \rightarrow & 1 \\ \textit{The hope diamond is in the bag.} & \rightarrow & 3 \\ \textit{The chinchilla is in the bag.} & \rightarrow & 5 \\ \textit{The book is in the bag.} & \rightarrow & 15 \\ \textit{The apple is in the bag.} & \rightarrow & 17 \end{bmatrix}$$

(84)   For all $p \in C'$ such that p is true, $Scale_{C'}(p) < s$

We can summarize how the structure in (79) translates into the appropriate meaning as follows:

(85)

Presence of *the*	Definiteness/Factivity
Head N	Set of entities
Property $\lambda x_i[\phi]$	Used to rank elements of the set given by N

The scale generated by $\lambda x_i[\phi]$ is the basis for the exclamative implicature (84).

We would like to suggest that wh exclamatives in Paduan have a semantic analysis very similar to that which was just outlined, despite the fact that Paduan exclamatives are clausal and not nominal in nature. In the rest of this section we will see how this works; the basic idea is that the wh phrase plays the role of the N in (77), providing a set of alternative entities which are assigned a likelihood ranking. The approach will not only account for the factivity of these forms, but also explain the difference in the scales associated with exclamatives and interrogatives.

5.3   *Positive Exclamatives*

Before we return to the wh exclamatives which contain clitic *no*, let us consider again those of the type in (86). This sentence is simpler than those which are our ultimate target, in that it is non-negative; it is also possible to see the fact that the wh constituent is in the higher CP position:

(86)   Che bel libro, a to   sorela, che i   ghe ga   regalà!
        what nice book, to your sister, that s.cl her have given
        'What a nice book, to your sister, they gave her as a a gift!'

---

not clitic *no*, but rather the construction itself (as was suggested by G. Postma, p.c.) Evidence that we are not dealing with a single construction here is that some examples, those we label 'exclamative', are factive, while those we label 'interrogative' are not. Also, if we treated them as the same construction, we would be left with the question of why the negation is expletive in the former but not the latter.

In order to formalize an exclamative semantics parallel to (85), we must begin with a presupposed set of entities. The D-linked wh phrase *che bel libro* can provide such a set. What this suggests to us is that the higher CP projection in (64)a is playing a role similar to that of the definite DP portion of the projection in (79). We represent this idea as follows: the higher CP is headed by an abstract [+def] element, and a phrase in its specifier position must share this specification.

As a D-linked element, *che bel libro* in (86) is presupposed to denote a salient set C of more-or-less beautiful books. Let us take the following set:

(87)   C = {illuminated manuscript from local Padua museum, nice first edition of *As I Lay Dying*, new copy of *In the Tennessee Country*, not completely ruined used copy of *Formal Philosophy*}

Our first question is what we should consider the literal semantics of a clausal exclamative to be. In light of their similarity to interrogatives, we will assume that these two structures share the same type of core meaning. As noted above, we follow Karttunen (1977) in viewing the meaning of a question as its set of true answers. Thus, the meaning of (86) will be (88):

(88) $\{p : p \text{ is true and } \exists x \in C[p = \text{'they gave your sister } x \text{ as a gift'}]\}$

We have discussed the way in which this interpretation might be derived in Section 5.1.

Now we turn to the exclamative force of (86). As with (77), we represent this aspect of the interpretation via a scalar implicature. Parallel to (79), context must provide a ranking of elements in C according to the likelihood that they have the property denoted by $\lambda x_i[\phi]$ (where ϕ is the translation of the IP, cf. (64)a). We thus need a ranking of these books of some degree of beauty according to how likely they are to have been given to your sister as a gift:

(89) $Scale_C =$

$$
\begin{bmatrix}
\text{Illuminated Manuscript} \rightarrow & 1 \\
\text{First edition of } As\ I\ Lay\ Dying \rightarrow & 4 \\
\text{New } In\ the\ Tennessee\ Country \rightarrow & 9 \\
\text{OK } Formal\ Philosophy \rightarrow & 15
\end{bmatrix}
$$

(89) is not quite ready to be used to generate the sentence's implicature. For the reasons noted above, we want to convert the scale into a scale of propositions. The sentence implicates that the element(s) of C which were in fact given to your sister were ranked low on the scale. That is, it concerns propositions of the form 'they gave your sister a', for $a \in C$. In (90) and (91), G stands for the property $\lambda x_i[they\ gave\ your\ sister\ x_i\ as\ a\ gift]$:

(90) $C' = \{$G(illuminated manuscript from local Padua museum), G(nice first edition of *As I Lay Dying*), G(new copy of *In the Tennessee Country*), G(not completely

ruined used copy of *Formal Philosophy*)}

(91) $Scale_{C'} =$

$$\begin{bmatrix} G(\text{Illuminated Manuscript}) & \rightarrow & 1 \\ G(\text{First Edition of } As\ I\ Lay\ Dying) & \rightarrow & 4 \\ G(\text{New } In\ the\ Tennessee\ Country) & \rightarrow & 9 \\ G(\text{OK } Formal\ Philosophy) & \rightarrow & 15 \end{bmatrix}$$

Given this, (92) is the scalar implicature which contributes the sentence's exclamative force:

(92)   For all $p \in C'$ such that p is true, $Scale_{C'}(p) < s$

That is, (92) says that everything they gave your sister was unexpected. Notice that nothing so far implies that they gave her anything as a gift—that is, we have not yet represented the factivity of (86). The D-linking presupposition mentioned above will not suffice. It only assures us of a salient set of beautiful books. Therefore we also need (93):

(93)   For some $a \in C, \lambda x_i[\textit{they gave } x_i \textit{ to your sister as a gift}](a) = 1$

5.4   *Exclamatives with Clitic* no

Now we are ready to turn to exclamatives with clitic *no*, such as

(94)   Cossa no ghe dise-lo!
         what   neg him say-s.cl
         'What things he's telling him!'

We have argued that example (94) has the structure (64)b. This is the kind of structure we had in (64)a except in that the verbal unit *no ghe dise* occupies the lower C^0 position. We assume that this material reconstructs to its base position prior to interpretation.

In order for (94) to be interpreted, as in the previous cases context must provide a set of alternative entities. We asssume that *cossa* is D-linked and provides the set, as *che bel libro* did in the previous section. In (94) these entities are things he might have told him:

(95) $C = \{$'he committed a murder', 'he is having trouble in his marriage', 'he dislikes his neighbor', 'it is a nice day outside'$\}$

The literal meaning of (94) is once again a question meaning. In this case, Karttunen's semantics yields (96):

(96) $\{p : p \textit{ is true and } \exists x \in C[p = $'he didn't tell him x'$]\}$

Note that these alternatives are all negative, reflecting the fact that clitic *no* is a real negative morpheme.

Now we turn to the exclamative force of (94). As before, context must provide a scale, ranking the elements of C according to how likely they are to have the property $\lambda x_i[\phi]$:

(97) $Scale_C =$

$$\begin{bmatrix} \textit{he committed a murder.} & \rightarrow & 1 \\ \textit{he is having trouble in his marriage.} & \rightarrow & 4 \\ \textit{he dislikes his neighbor.} & \rightarrow & 12 \\ \textit{it is a nice day outside.} & \rightarrow & 15 \end{bmatrix}$$

This scale is then converted into a scale of propositions. In the following, T is the property $\lambda x_i[\textit{he told him } x_i]$:

(98) $C' = \{\neg T(\text{he committed a murder'}, \neg T(\text{he is having trouble in his marriage}),$ $\neg T(\text{he dislikes his neighbor}), \neg T(\text{it is a nice day outside})\}$

(99) $Scale_{C'} =$

$$\begin{bmatrix} \neg T(\textit{he committed a murder.}) & \rightarrow & 1 \\ \neg T(\textit{he is having trouble in his marriage.}) & \rightarrow & 4 \\ \neg T(\textit{he dislikes his neighbor.}) & \rightarrow & 12 \\ \neg T(\textit{it is a nice day outside.}) & \rightarrow & 15 \end{bmatrix}$$

Note again that negation occurs in all of the alternative proposition.

This is the scale which clitic *no* uses to generate its implicature. The implicature associated with clitic *no* is by now familiar:

(100)   For all $p \in C'$ such that p is true, $Scale_{C'}(p) < s$

This is the same as (92), except that the alternatives being quantified over are all negative. It thus says that everything he didn't tell him was very low on the expectation scale, indicating that he did tell him some pretty unexpected things. (100) is a formal version of the implicature suggested for this sentence in the informal discussion of Section 3.

Again as was the case with the positive exclamatives, we also need to incorporate a factive presupposition. The kind utilized for the positive exclamatives will work here too. Parallel to (93), we have:

(101)   For some $a \in C, \lambda x_i[\textit{he told him } x_i](a) = 1$.

That is, (94) presupposes that he told him something.

5.5 *Summary of Exclamative Semantics*

Overall, the situation with clausal exclamatives can be summarized as follows:

(102)

D-linked set represented in CP^2	Presupposed set of alternative entities C
Property $\lambda x_i[\phi]$	Used to rank alternatives
Presence of *che* or *no* in head of CP^1	Factive presupposition that some $a \in C$ has $\lambda x_i[\phi]$

The difference between positive and negative amounts to the following:

(103)

Che in head of CP^1	Implicates that every alternative with property $\lambda x_i[\phi]$ is low on scale
No in head of CP^1	Implicates that every alternative without property $\lambda x_i[\phi]$ is low on scale

The last several sections have shown that it is possible to produce the scales for wh exclamatives and wh interrogatives so that a common meaning for clitic *no* generates the right implicature in both cases. The contrast between the two is essentially in whether the context ranks a set of alternative entities or a set of alternative propositions. This difference leads to opposite scales for the constructions—an unexpectedness scale in one case and an expectedness scale in the other. The semantic difference is directly reflected in the structural one we have proposed. The higher CP in exclamatives works like the DP in a nominal exclamative of the English type, presupposing a set of entities to be ranked. The ranking is accomplished independently of the presence of negation. In contrast, the interrogatives lack this higher projection, and simply work with a set of alternative propositions.

To summarize the way in which the difference in scales between exclamatives and interrogatives arises:

- Exclamative alternatives are entities from the D-linked set and are ranked prior to the application of negation. In the presence of clitic *no* this results in an unexpectedness scale.

- Interrogative alternatives are propositions generated by focus and ranked according to likelihood. This results in an expectedness scale.

5.6 *Yes/No Exclamatives and Interrogatives*

We would like to conclude this section by pointing out one issue which arises if one tries to extend the present analysis to the yes/no constructions discussed in Sections 2 and 3. As one can see by examining (36) and (38), repeated below, both of these constructions are associated with expectedness scales:

(104)   No ga-lo   magnà tuto!
        neg has-s.cl eaten   everything
        'He's eaten everything!'

(105)   Scale = ⟨ 'he ate everything' ≺ 'he didn't eat everything' ⟩

(106)a. Vien-lo   o   no   vien-lo?
        comes-s.cl or neg comes-s.cl
        'Is he coming or is he not coming?'
     b. No vien-lo   miga?
        neg comes-s.cl neg
        'He's not coming??'

(107)   Scale = ⟨ 'he isn't coming' ≺ 'he is coming' ⟩

(104) is used in a context where his eating everything is unexpected, while (106) would be used when his not coming is unexpected. Thus, in both cases the unexpected alternative is 'on the left end' of the scale. This point is problematical because the semantics we have developed above for the wh exclamatives gets an unexpectedness scale. That is, in the wh cases the scales are opposite (expectedness vs. unexpectedness), while in the yes/no cases they do not differ in this way.

It seems to us that it may be helpful to look at the yes/no scales differently:

(108)

yes/no exclamative	$p \prec \neg p$
yes/no interrogative	$\neg p \prec p$

In this light, yes/no exclamatives and yes/no interrogatives may be seen as having opposite scales. We would hope to be able to unify this type of scale reversal with that seen in the wh constructions.

6   Conclusion

This work has made several contributions. First, summarizing the results of Portner and Zanuttini (1996), we have shown that there is a syntactically distinct form of *no* in Paduan which has a uniform semantics. Since this form appears in both exclamatives and interrogatives, we have investigated the differences between them, arguing the following: (i) They contrast semantically in terms of factivity and in the types of scales they are associated with. (ii) The semantic distinction between these constructions finds syntactic support, in that exclamatives have an additional level of CP structure which interrogatives lack. With this information, our goal was to understand the appearance of expletive negation in exclamatives. We suggest that the exclamative scales interact with the implicature of clitic *no* to make *no*'s negative meaning hard to detect. Thus, these apparent cases of expletive negation really contribute negative meaning to their clauses.

In our future work, we hope to pursue two related issues:

1. Other negative elements have been noticed to have a similar surprise-indicating function. For example, Italian *mica* (Cinque 1976) and Paduan *miga* are syntactically quite different from *no* (Zanuttini 1997), in that they occur after the tensed verb and do not show head-like behavior. Further afield, we noted the somewhat parallel behavior of German *nicht* (Meibauer 1990), which also does not have just the same syntactic characterization as clitic *no*. We would like to explore the consequences of these similarities and differences for our approach.

2. We hope to extend our analysis of expletive negation to other cases, such as comparatives and *until* clauses. Some examples of these constructions are given below:

(109) a. Ze sta   più   belo de quelo che   *no* pensase.
       is been more nice of that   that neg thought
       'It was nicer than I thought.'
   b. El se più   furbo che   *no* inteligente.
       s.cl is more smart that neg intelligent
       'He is shrewder than intelligent.'

(110) a. Stago qua fin   che   *no* te   torni.
        stay   here until that neg s.cl return
        'I'll stay here until you come back.'
    b. So sta   in agitassion fin   che   *no* te   go   visto rivare.
        am stayed in agitation   until that neg s.cl have seen to-arrive
        'I worried until I saw you arrive.'

Both of these are associated with orderings of a sort different from the scales we have used in this article: a scale of degrees in comparatives and an ordering of times in *until* clauses. Perhaps a general notion of ordering is common to all cases of expletive negation.

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