Asserted and Implicated Meanings
in Catalan *Déu n'hi do*

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Abstract

In this paper, we present an analysis of the semantics and pragmatics of the lexicalized Catalan expression *Déu n'hi do*, which embeds *wh*-clauses, including exclamatives. Interestingly, though, *Déu n'hi do* sentences do not convey extreme degree, they have have different distributional properties than matrix exclamatives, and they usually – but not always – co-occur with an exclamative intonation. We argue that the peculiar properties of *Déu n'hi do* derive from the combination of the assertion and the scalar implicature it conveys, plus the conventional implicature generated by this intonation.

1 Introduction

The goal of this paper is to provide an analysis of the semantics and pragmatics of the Catalan particle *Déu n'hi do* (DND henceforth), as illustrated in (1). As a first intuitive approximation, this particle may be roughly translated in English by the meaning of the adverb *quite* when uttered with an exclamative intonation. As we spell out our analysis, it should become clear why we have chosen this paraphrase.

(1)   Déu n'hi do quin fred que fa!
       DND   what cold that makes
       'It's quite cold!'

DND is a linguistically interesting particle for the following three reasons: (1) it is a *wh*-embedding predicate that differs semantically and pragmatically from other *wh*-embedding predicates such as *know* or *it's amazing*, (2) it selects for *wh*-exclamatives, but it does not indicate extreme degree – which is in principle counter-intuitive – and (3) it shows a complex semantic behavior, conveying meaning at different semantic levels.

Our main claims in this paper are the following: (*i*) DND does not select for exclamatives or interrogatives, but for *wh*-clauses in general, (*ii*) DND generates a conversational implicature such that the proposition that is true in the actual world is compatible with the worlds that the speaker considers unusual (but not weird), and (*iii*) DND

contributes to discourse at both at-issue and conventional implicature (CI) domains of meaning. Furthermore, apart from analyzing the properties of DND, we also argue that there is a complex relationship between different domains of meaning: i.e., only assertions are able to cancel conversational implicatures.

This paper is structured as follows: Section 2 presents some background and previous work on this particle, Section 3 gives an overview of the main properties of DND, Section 4 presents a previous analysis, which we call *an exclamative account*, and Section 5 presents our current proposal, a non-exclamative account. Finally, Section 6 concludes.

2   Background

DND comes from the lexicalization of the sentence "God gave to you" (see the gloss in (2-a)), which in Old Catalan could be used literally, as shown in (2-b), and in modern Catalan has acquired a figurative meaning. Specifically, it has become an emotive predicate, as illustrated in (2-c) and (2-d).

(2)   a.   Déu n'hi   do
           God DO.IO give
      b.   Doni'm un pa   que Déu n'hi do.
           Give me a   bread that DND
           'Give me some bread that God gave to you.'
      c.   Tinc   una feina que Déu n'hi do!
           I have a   work that DND
           'I have quite a lot of work!'
      d.   Déu n'hi do quina feina que tinc!
           DND   what work that I have
           'I have quite a lot of work!'

As far as its distribution is concerned, DND can appear on its own or it can also take single or multiple *wh*-questions (cf. (3-a) and (3-b)), *wh*-exclamatives (cf. (3-c))[1] and DPs (see (3-d)).

(3)   a.   Déu n'hi do qui va venir a la festa!
           'DND who came to the party!'
      b.   Déu n'hi do qui va ballar amb qui!
           'DND who danced with who!'
      c.   Déu n'hi do que bé que sona!
           'DND how good it sounds!'
      d.   Déu n'hi do la gent que va venir!
           'DND the people who came!'

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[1]This embedded clause can only be a *wh*-exclamative since the *wh*-word *que* in Catalan can only introduce *wh*-exclamatives and, crucially, not *wh*-interrogatives. Also, note that there is a second *que*, which is an optional complementizer that also occurs exclusively with exclamatives.

Sancho (2003) has argued that the basic function of DND "is that of emphasis or intensification" (p.157). He has also noted that DND can be followed by an exclamative and he claims that, in such cases, DND "only reinforces constructions which are emphatic by themselves" (p.159). The idea that DND's basic function is that of intensification is recurrent in the dictionaries that attempt to define it. For example, the classical Catalan dictionary Alcover and Moll (1968-1969) defines DND in the following way: "It is used as an emphatic exclamation, to express the greatness or importance of something or the admiration it produces". Also, in her study of interjections, Cuenca (2002) classifies DND as an expressive interjection which expresses admiration or surprise. In this paper, we will argue against both claims (1) that DND is an intensifier and (2) that DND is semantically redundant when it appears followed by a *wh*-clause. In the next Section, we present some evidence that claims (1) and (2) do not hold.

3   Properties

DND has three interesting properties, which our analysis needs to explain.

Not-extreme degree. The first interesting property of DND is that it conveys that an extreme degree has not been reached. Therefore, the discourse in (4-a), in which this lack of extreme degree is explicitly conveyed, is perfectly coherent. This contrasts with the behavior of other emotive predicates and of matrix exclamatives, which are not compatible with an explicit denial of extreme degree, as (4-b) and (4-c) show. The proposals mentioned in the previous Section mistakenly attribute to DND a purely exclamative meaning and, thus, cannot account for cases like (4-a).

(4)　　a.　　Déu n'hi do que alt que és. Tanmateix, no és extremament alt.
　　　　　　'DND how tall he is. However, he's not extremely tall.'
　　　　b.　　# It's amazing how tall he is. However, he's not extremely tall.
　　　　c.　　# How tall he is! However, he's not extremely tall.

Interestingly, the lack of extreme degree can be canceled and, therefore, the discourse in (5-a) is also felicitous. However, there are some restrictions on this cancelation. In particular, it cannot take place within the DND sentence itself (see (5-b)):

(5)　　a.　　Déu n'hi do que alt que és! De fet, és extremament alt.
　　　　　　'DND how tall he is! In fact, he's extremely tall.'
　　　　b.　　# Déu n'hi do que extremament alt que és!
　　　　　　'DND how extremely tall he is!'

Discourse possibilities. DND can appear in some contexts were matrix *wh*-clauses are not acceptable. For example, DND can answer questions ((6-b)), while *wh*-exclamatives and other emotive predicates cannot ((6-c) and (6-d)).

(6)　　a.　　Have you published many papers?
　　　　b.　　Déu n'hi do.
　　　　c.　　# It's amazing.
　　　　d.　　# How many papers I've published!

Additionally, DND can be embedded syntactically in some contexts that do not allow for matrix *wh*-clauses, such as verbs of belief (see (7)):

(7)   Crec que *(Déu n'hi do) que guapo que és el seu nòvio!
        'I believe that DND how cute her boyfriend is!'

        Intonation. The third interesting property of DND is that it usually appears with an exclamative intonation (ExInt, henceforth), but can also appear without it and, in that case, it is pronounced with a plain declarative intonation (see (8)).

(8)   a.   La Júlia creu que [Déu n'hi do que guapo que és el seu nòvio!]$_{ExInt}$.
        b.   La Júlia creu que Déu n'hi do que guapo que és el seu nòvio.
               'Júlia believes that DND how cute her boyfriend is.'

We will show in Section 5 how this variation has interesting semantic effects.

4   An exclamative account of DND

This section briefly reviews a previous analysis of DND (Mayol, 2007), which captured the lack of extreme degree that DND conveys by using the semantics of exclamatives proposed by Zanuttini and Portner (2003). We first present this analysis, then, we see its application to DND, and we close the section by justifying the need of an alternative.

4.1   Zanuttini and Porter's (2003) semantics of exclamatives

Zanuttini and Portner's (2003) proposal may be summarized as follows. They posit three elements in order to derive the semantics of exclamatives. Syntactically, exclamatives contain a *wh* operator-variable structure and an abstract factive morpheme FACT. Moreover, there is a process of widening of the domain of quantification of the *wh*-operator. Let us examine each element in turn:

        (1) The *wh*-component of the sentence is responsible for creating the denotation of a set of alternative propositions, as in questions (following Hamblin 1973 and Karttunen 1977). Thus, in a context in which we are discussing what chili peppers our friend John likes to eat, the sentence in (9-a) denotes a set of propositions of the form 'he eats *x*', with a contextual restriction on the domain of quantification. The current domain of quantification is the set of peppers D1, as specified in (9-b).

(9)   a. $[\![$what things he eats!$]\!]_w = \{p\colon p$ is true in w and $\exists x(p =$ 'he eats x')$\} = \{$he eats poblanos, he eats serranos, he eats jalapeños$\}$
        b.   D1 = {poblano, serrano, jalapeño}

        (2) Let us turn now to the second ingredient: widening. At an intuitive level, widening makes the domain of quantification bigger so that it includes things we would otherwise not have considered, with more extreme values. More formally, for any clause S containing widening, the initial domain of quantification, D1, is widened to a new

domain of quantification, D3.[2] In each domain of quantification D, there is an ordering represented by $[\![S]\!]_{w,D,<}$. The widening process is such that the conditions in (10-a) and (10-b) hold:

(10)   a. $[\![S]\!]_{w,D3,<} - [\![S]\!]_{w,D1,<} \neq \emptyset$
          b. $\forall x \forall y [(x \in D1 \ \& \ y \in (D3 - D1) \rightarrow x < y]$
          c.   D3= {poblano, serrano, jalapeño, güero, habanero}

That is, the difference between the widened domain D3 and the regular domain D1 is not empty; D3 adds something which was not in the previous domain D1. Besides, there is a particular ordering in the domains, such that the widened domain, D3, contains more extreme values. Continuing with (9-a), the widened domain D3 is a superset of D1, containing types of peppers with more extreme degrees of spiciness, such as the set in (10-c).

      (3) The factive morpheme FACT will introduce the presupposition in (11-a): all the propositions added to the denotation of the clause through evaluation in relation to the widened domain are true. Thus, the sentence in (9-a) has the presupposition in (11-b): John eats the hottest peppers, that is, the ones contained in the widened domain, but not in the regular domain.

(11)   a. $\forall p \in [\![S]\!]_{w,D3,<} - [\![S]\!]_{w,D1,<} : p$ is true
          b. $[\![$what things he eats!$]\!]_w$ = {he eats güeros, he eats habaneros}

4.2   DND exclamative semantics

Mayol (2007) used the semantics of exclamatives that we just presented to capture the lack of extreme value conveyed by DND. This was achieved by introducing a further domain of quantification, D2. The proposal is that DND presupposes that there is another domain of quantification, D2,which is a proper subset of D3 and a proper superset of D1, as defined in (12).

(12) $[\![$DND-CP$]\!]_w$ is defined iff:
          a. $[\![CP]\!]_{w,D2,<} - [\![CP]\!]_{w,D1,<} \neq \emptyset$
          b. $[\![CP]\!]_{w,D3,<} - [\![CP]\!]_{w,D2,<} \neq \emptyset$
          c. $\forall x \forall y \forall z [(x \in D1 \ \& \ y \in (D2 - D1) \& z \in (D3 - D2)) \rightarrow x < y < z]$

      The domain D2 needs to be bigger than D1 (condition (12-a)) and smaller than D3 (condition (12-b)). Also, there remains the ordering in the domains (condition (12-c)), so that D1 contains the least extreme values, D3 contains all values, including the more extreme values, and D2 falls in the middle between the other two domains. For the example in (9-a), this middle domain D2 may look like the set specified in (13-a). The assertion of a DND-clause is given in (13-b). All the propositions added to the denotation when the assignment function is evaluated with respect to D2 (the middle domain) are true.

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[2]Zanuttini and Portner (2003) call this widened domain *D2*. It is called *D3* here for expository purposes, as it will become clear once Mayol's (2007) analysis of DND is introduced.

(13)   a.   D2 = {poblano, serrano, jalapeño, güero}
        b. $\forall p \in [\![\text{CP}]\!]_{w,D2,<} - [\![\text{CP}]\!]_{w,D1,<} : p$ is true
        c. $[\![\text{DND what things he eats!}]\!]_w = \{\text{he eats güeros}\}$

Thus, modifying the example in (9-a) and turning it into a DND-exclamative would yield the assertion in (13-c). That is, the assertion is that John eats mildly spicy peppers, but it says nothing about the habanero, the very spicy pepper which is a member of D3, but not of D2.

Mayol (2007) proposes that there is a further component of meaning, a scalar conversational implicature, given in (14-a): all the propositions added to the denotation when the assignment function is evaluated with respect to D3 are false. That is, there is no extreme widening. Being a conversational implicature, it can be canceled, as was shown in (5-a).

(14)   a.   (i) $\forall p \in [\![\text{CP}]\!]_{w,D3,<} - [\![\text{CP}]\!]_{w,D2,<} : p$ is false
            (ii) $[\![\text{DND what things he eats!}]\!]_w = $ 'he eats habaneros' is implicated to be false.

Thus, the scalar conversational implicature of the DND-exclamative in (13-c) is that it is false that John eats the habanero, the extremely spicy pepper which is contained in D3, but not in D2.

4.3   Why an alternative?

We present an alternative approach to DND both for theoretical and empirical reasons. From the theoretical side, the notion of widening is not an uncontroversial one. It may be useful to explain the behavior of matrix exclamatives, but it also involves stipulations; for instance, it is be triggered by a null factive morpheme with an ad-hoc interpretation. Along with others (cf. D'Avis 2002; Abels 2005; Castroviejo 2006; Rett t.a.), we would like to explore whether we can do without it and still account for the data. From the empirical side, this proposal does not explain the contribution of intonation and also has nothing to say about the impossible cancelation in (5-b).

5   A non-exclamative account

The proposal we make in order to account for the properties presented in Section 3 aims to be maximally simple. This is why we are not considering *wh*-interrogatives and *wh*-exclamatives as being semantically different. Crucially, none of the aforementioned properties hinge on the fact that the *wh*-clause introduced by DND is a *wh*-interrogative or a *wh*-exclamative. For our purposes here, we leave aside their syntactical or morphological differences and we focus on the core semantic features they have in common. In particular, we consider three kinds of meaning that are involved in the utterence of a DND sentence, which will be developed in the following subsections. We first look at DND as a *wh*-embedding predicate with an at-issue meaning, then we deal with the scalar implicature it generates, and finally we elaborate on the expressive meaning that derives from the usual pairing between DND and exclamative intonation.

5.1   DND as a *wh*-embedding predicate

In order to understand the meaning that DND contributes to the at-issue dimension (that is, its descriptive or ordinary meaning, cf. Potts 2005), we take as a model Sharvit (2002)'s denotation for the verb *surprise* in (15).

(15) $[\![\text{surprise}]\!]^{H/K}(w)(Q)(a) = 1$ iff NONEXP$(a)(w) \supseteq \cap \{p : p \in Q(w) \ \& \ w \in p\}$

NONEXP(a) is the complementary set of the set compatible with a's expectations in w. (15) says that *surprise* takes as argument a world w, a Hamblin/Karttunen question denotation Q (i.e., a set of propositions) and an individual a and it yields true only if the true answer to the question Q in w is included in the set of unexpected worlds according to individual a. To illustrate it with an example, the paraphrase of (16-a) is in (16-b).

(16)   a.   It surprises John who came.
      b.   For all worlds w, the proposition that truthfully answers the question *Who came in w?* is not compatible with John's set of expected worlds.

DND resembles *surprise* in that the former also takes Q as argument, but rather than expressing unexpectedness, DND indicates that the true answer to the question is unusual.[3] That is why, instead of making use of NONEXP(a), we propose to include in its denotation another predicate, namely UNUSUAL(a).[4] We assume the following: (*i*) UNUSUAL(a) is the complement set of the set of worlds compatible with what a considers to be standard, and (*ii*) UNUSUAL(a) is a subset of the set of weird worlds (let us call it WEIRD(a)), such that the material implication in (17) holds, but it does not hold that an unusual world must be a weird one. The denotation for DND we propose, which is adapted from (15), can be seen in (18).

(17) $\forall w\ [w \in \text{WEIRD}(a) \rightarrow w \in \text{UNUSUAL}(a)]$

(18) $[\![\text{DND}]\!](w)(Q)(a) = 1$ iff UNUSUAL$(a)(w) \supseteq \cap \{p : p \in Q(w) \ \& \ w \in p\}$

The restriction imposed on the set of propositions in the formula above is not related to a's complementary set of expected worlds (i.e., NONEXP(a)), but rather to the complementary set of the set of worlds a considers to be standard (i.e., UNUSUAL(a)). The example in (19-a) can be paraphrased as in (19-b). We should also point out that, since DND is not a verb that can be inflected (unlike *surprise*), a will refer to the speaker by default. But if DND is embedded in a belief predicate, then a can identify its subject.

(19)   a.   Déu n'hi do quines coses que menja!
          'DND what things he eats!'
      b.   For all worlds w, the proposition that truthfully answers the question *What things does he eat in w?* is not compatible with the speaker's set of standard worlds.

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[3]We assume that when DND appears on its own – for instance when answering a question (see (6-b)) – Q is recovered from context.

[4]It is not the aim of this paper to go any deeper in the formalization of this predicate. This could be possibly done by appealing to Kratzer (1981)'s notion of *ordering source*. We thank Cécile Meier (p.c.) for this suggestion, and leave this issue for future research.

The meaning just described is asserted content, which belongs to the at-issue dimension of meaning. Assertions are characterized by (1) their ability to anwer questions, and (2) the ability of its content to embed under a predicate like *believe*, which takes propositions that may be either true or false. Since DND can answer a question ((6-b))[5] and embed under *believe* ((7)), its descriptive content (as presented in (18)) counts as at-issue meaning and, thus, can be used to make an assertion.

5.2   A scalar implicature

In this subsection we show that DND generates a scalar implicature, which conveys that the worlds we are taking into account are those which are compatible with what the speaker considers to be unusual, but not weird. In order to do so, we first take a quick look at a prototypical case of scalar implicature, namely the example of *some*.

Some is part of a scale which contains other quantificational items such as, for instance, *all*, which we represent as <some, all> (cf. Horn 1972). In these scales, every item logically entails the item on its left and implicates the negation of the item on its right. In other words, if we choose to use *some* and we are cooperative speakers, we implicate *not all*. This explains why the follow-up in (20) is pefectly natural, because we understand the first part of the sentence as meaning, by default, that the speaker did not meet all of his/her friends at the party.

(20)   I met some of my friends at the party. However, I didn't meet all of them.

Still, since a scalar implicature is a particular kind of a conversational implicature and a conversational implicature can be canceled, the first part of the sentence in (21) can be followed by another sentence that denies the implicature according to which the speaker did not meet all of his friends at the party, as shown in (21).

(21)   I met some of my friends at the party. In fact, I met all of them.

Now, we can draw a parallelism between *some* and DND. We propose that DND generates a scalar implicature by virtue of it including UNUSUAL. In particular, we understand that UNUSUAL(a) is part of a scale of the following form: <UNUSUAL(a), WEIRD(a)>. Again, if a world is weird according to a, it must also be unusual, but an unusual world may (but must not) be a weird world. Moreover, the use of a lexical item that incorporates UNUSUAL(a) implicates that WEIRD(a) does not hold. This explains why we can both reinforce this meaning ((22)) and cancel it ((23)).

(22)   Déu n'hi do que alt que és! Tanmateix, no és extremament alt.
         'DND how tall he is! However, he's not extremely tall.'

(23)   Déu n'hi do que alt que és! De fet, és extremament alt.
         'DND how tall he is! In fact, he's extremely tall.'

In giving a first approximation to the meaning of DND ((1)), we have proposed to use the English adverb *quite*. In what remains of this subsection we will see that *quite* resembles

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DND in also generating a scalar implicature. In fact, *quite* – which takes as argument a gradable predicate, as in (24-b) – and DND convey similar meanings when the latter takes as argument a degree *wh*-clause, as in (24-a).

(24)   a.   DND how tall Pau is!
        b.   Pau is quite tall!

      Certainly, the compositional semantics of (24-a) and (24-b) is different: whereas (24-a) involves a question denotation, we could paraphrase (24-b) as *Pau is tall to a high degree*. The similarity between DND and *quite* emerges because asserting that a proposition with a gradable property is unusual amounts to asserting that this property has a high degree. Moreover, *quite* also generates an implicature, since it is part of the following scale: <quite, very>. Hence, when we say that Pau is tall to a high degree, we implicate that this degree is not extreme. That is, *quite* implicates *not very*. Consequently, just like what happens with DND, we can both reinforce ((25-a)) and cancel ((25-b)) this implicature.

(25)   a.   Pau is quite tall. However, he's not very tall.
        b.   Pau is quite tall! In fact, he is very tall.

      To sum up, we argue that DND asserts that the proposition that is true in the actual world is compatible with the worlds that the speaker considers unusual and conversationally implicates that this proposition is not compatible with the worlds that the speaker considers weird. This is how we capture the lack of extreme degree that DND conveys.

5.3   Expressive meaning

Last but not least, DND can convey a third kind of meaning, namely a conventional implicature (CI), in the sense of Potts (2005) and Potts (2007). We propose to derive this effect from the usual co-occurrence of the exclamative intonation (ExInt) and DND (cf. (8)). In particular, we see ExInt as an instance of an expressive item with similar properties as those that characterize *damn* in *The damn machine doesn't work*. Likewise, intonation takes as input at-issue meaning and returns expressive meaning, even though *damn* combines with a noun and ExInt, with an entire proposition. The meaning contributed at the expressive dimension is expressed in (26).

(26)   NONEXP$_s$(w) $\supseteq$ p

In prose, we claim that there is a proposition *p* which, crucially, corresponds to the true answer to the question *Q* at the at-issue meaning (cf. (18)) and which is incompatible with the set of the speaker's expected worlds (we are adopting here Sharvit (2002)'s NONEXP predicate to represent the complement set of the set compatible with the speaker's expected worlds).

      In order to show that the information conveyed by intonation is comparable with that of a regular expressive item (i.e., an epithet, a non-restrictive relative clause or a parenthetical), we will go over the properties that Potts (2007) attributes to expressives,

starting from perspective dependence.

Expressive meaning cannot be embedded; that is, it is strictly speaker-oriented. In (27) we see that a DND sentence can embed in a belief predicate (as previously shown in (7)). If we abstract away from ExInt, UNUSUAL(a) is applied to *Júlia*, so the speaker may felicitously contribute that s/he finds this fact unsurprising. However, if the sentence includes ExInt, which involves the speaker's surprise at the true answer to the question *How late did Peter come?*, the sentence introduced by *but* is necessarily contradictory.

(27)   La Júlia creu que [Déu n'hi do que tard que ha arribat en Pere (#!$_{ExInt}$)], però a
         mi no m'ho sembla.
         'Julia believes that DND how late Peter was!, but I don't feel this way.'

Also, expressive meaning is nondisplaceable; that is, it expresses something about the utterance situation. We can show that this holds for ExInt, too, by means of the following example:

(28)   Déu n'hi do que tard que va arribar en Pere ahir (#!$_{ExInt}$) Ahir em va sorprendre,
         però avui ja no.
         'DND how late Peter was yesterday! This surprised me yesterday, but not to-
         day.'

In (28), we see that, if the DND sentence includes ExInt, then the follow-up is infelicitous, since the speaker is stating that the meaning conveyed by ExInt belongs to the past and it is not valid at the moment of utterance.

On the other hand, ExInt, like regular expressive items, shows immediacy; that is, it behaves like a performative, which achieves its intended act simply by being uttered. In other words, in using ExInt, the speaker introduces this meaning directly to the addressee's commitment set (cf. Gunlogson 2003, Bonami and Godard 2008). Crucially, unlike asserted meaning, the content conveyed by ExInt cannot be judged true or false by the rest of the discourse participants. Consider the dialogue below:

(29)   a.   A: Déu n'hi do que tard que va arribar en Pere ahir!$_{ExInt}$
                  'DND how late Peter was yesterday!'
         b.   B1: That's not true. He arrived as usual.
         c.   B2: # That's not true. I don't think this is unexpected at all.
         d.   B3: # That's true. I also think this is unexpected.

The reply in (29-b) is felicitous, because it is denying assertion conveyed by the DND sentence. Since it concerns the at-issue dimension, the addressee is allowed to judge it before incorporating it to his/her commitment set. In contrast, both the replies in (29-c) and (29-d), which are attempts to judge the meaning conveyed by ExInt true or false, are ruled out.

Finally, expressive meaning exhibits the property that Potts calls *independence*. This amounts to saying that it can be removed, but the descriptive meaning is still conveyed. Below, we see an example of a DND sentence without intonation, which is still able to make its contribution to the discourse felicitously.

(30) a. A: Has publicat gaire?
          'Have you published much?'
      b. B: Déu n'hi do.
          'Quite a lot.'

The previous example shows that the at-issue and expressive meanings that DND involves are independent. Why do they co-occur so often, then? This has to do with the fact that DND asserts that something is unusual, on the one hand, and, on the other hand, unusual things are generally (but not necessarily) unexpected. Hence, the utterance of DND and ExInt allows the speaker to convey both things at a time: unusualness and unexpectedness.[6]

At this point it seems that the division of labor in at-issue, conversationally implicated and conventionally implicated meaning offers a neat picture of the behavior of DND sentences. However, we cannot still account for the contrast in (5) repeated below:

(31) a. Déu n'hi do que alt que és! De fet, és extremament alt.
          'DND how tell he is! In fact, he is extremely tall.'
      b. # Déu n'hi do que extremament alt que és!
          'DND how extremely tall he is!'

To be able to explain the contrast above, we need to make an additional claim; we must pay attention to the kind of meaning that is being used to cancel the scalar implicature in each case. Crucially, in (31-a), the follow-up is a declarative that functions as an assertion. Thus, assertions are able to cancel implicatures. However, following Castroviejo (2008), we take *extremely* in the particular configuration exemplified by (31-b) to be a non-restrictive modifier. As such, it is a function that takes at-issue meaning as input and returns expressive meaning. In other words, it is a CI item. Our claim is, in fact, that CIs – contrary to assertions – cannot cancel scalar implicatures.[7]

In order to justify this claim, let us provide additional evidence. For starters, we can show that regular CIs, like non-restrictive relative clauses (aka *supplements* in Potts 2005), cannot cancel a scalar implicature, either. Consider the examples below:

(32) a. I met a pretty tall boy. In fact, he was extremely tall.
      b. #I met a pretty tall boy, who, in fact, was extremely tall/a giant.

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[6]It is an interesting issue why intonation can be embedded in those cases and not others. We leave the study of this phenomenon for further research and thank Ede Zimmermann (p.c.) for this valuable comment.

[7]There is another difference between the two cancellations in (31): the latter one does not include the discourse marker *in fact*, which is syntactically impossible in this configuration (we thank Galit Sassoon for this observation). However, we can reject the possibility that the absence of *in fact* is responsible for the ungrammaticality of (31-b) on two grounds: first, sentences which do allow for *in fact* are also unacceptable when a CI is trying to cancel an implicature (cf. (32-b)) and, second, some implicatures can be felicitously canceled even without *in fact*, cf. (i).

(i) a. John has two or more brothers.
     b. John has two brothers or more.

The contrast between *a.* and *b.* shows that only at-issue meaning is able to cancel the implicature generated by *pretty* according to which the boy is tall, but not extremely tall. This holds even if the two sentences have the same amount of information, but this information is computed at different dimensions of meaning.

Not only this, it appears to be the case that presupposed meaning is also unable to cancel scalar implicatures. See for example (33):

(33)   a.   Some of my students came to the party. In fact, I believe that all of them came.
        b.   # Some of my students came to the party. In fact, I regret that all of them came.

In the examples above, we have the prototypical case of *some* (cf. Section 5.2 above), which conversationally implicates *not all*. In the *a.* sentence, the implicature is canceled by using a follow-up which functions as an assertion. On the other hand, in the follow-up of the *b.* sentence, the information according to which all of the students came to the party is presupposed and not asserted (the *that*-clause is embedded under a factive predicate). Note that this presupposed content cannot cancel the implicature. Therefore, this points to a complex relationship between different dimensions of meanings; it is not the case that the weakest meaning (here, the conversational implicature) always disappears; rather, only assertions seem to be able to cancel it.

6   Conclusions

To wrap up, we have shown that *Déu n'hi do* conveys at the at-issue dimension a meaning similar to *quite*, which can be canceled, but only by means of another assertion (and not by means of a CI or a presupposition). Also, in combination with an exclamative intonation, *Déu n'hi do* contributes to the expressive dimension a conventional implicated meaning, roughly, that the proposition about which *Déu n'hi do* asserts that is unusual is also unexpected.

This being a language-specific phenomenon, we may wonder whether this research is relevant beyond Catalan *Déu n'hi do*. We strongly believe the answer is yes. First, we have shown that we can account for the properties of embedded *wh*-clauses with a single semantic denotation: i.e., we can subsume the semantics of interrogatives and exclamatives under a common semantics. We have thus offered additional evidence in favor of an analysis of embedded *wh*-exclamatives viewed as having the same at-issue content as *wh*-interrogatives. Second, we have highlighted the semantic role of intonation and have proposed an interpretation for it. And third, we have identified another parameter that characterizes assertions (w.r.t. CIs and presuppositions), namely the ability to cancel conversational implicatures.

Of course, many questions regarding the topics touched upon in this paper remain unanswered. The first one we consider concerns anyone working on expressives: we should formalize and restrict the interactions between the at-issue and the CI dimension. Moreover, it would be interesting to test to what extent *Déu n'hi do* and other emotive predicates like *it's amazing* or *you wouldn't believe* differ. And finally, we would like to

find out whether DPs introduced by *Déu n'hi do* provide any arguments for or against so-called *concealed exclamations*.

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