1. Introduction

This paper has two main goals. The first goal is to present a formal semantic analysis of the Catalan interjection ‘Déu n’hi do’\(^1\) (DND, henceforth). The second goal of the paper is to explore the relationship between DND and exclamative sentences. The study of DND sheds some light on the semantic properties of exclamatives. It provides evidence for the existence of different levels of meaning in exclamatives, which is something impossible to test for without this sort of particle. Namely, DND provides evidence for a conventional implicature in the meaning of exclamatives.

The paper is structured as follows. Section 2 presents the syntactic distribution of DND; Section 3 presents background about previous claims about DND in the literature and the semantics of exclamatives; Section 4 presents the main differences between bare-exclamatives and DND-clauses; Section 5 presents a tentative analysis of DND, from which some puzzles arise; Section 6 presents evidence for different levels of meaning in exclamatives, using DND-clauses as evidence and solving the puzzles presented in Section 5. Section 7 concludes.

2. ‘Déu n’hi do’ and its syntactic distribution

DND has the following syntactic distribution: it appears before syntactic exclamatives or questions. It may precede different types of exclamatives: clausal, as in (1)\(^2\), nominal, as in (2), or elliptic, as in (3). (4) is an example of DND preceding a question.

(1) a. Déu n’hi do com sona de bé
DND how sounds of good
‘DND how good it sounds’

b. Déu n’hi do que bé que sona
DND how good that sounds
‘DND how good it sounds’

(2) Déu n’hi do (de) els votes que ha obtingut
DND (of) the votes that has obtained
‘DND the votes he obtained’

(3) Estic molt d’acord amb tu: no sé si del tot, però Déu n’hi do!
’am very of agree with you: no know if totally, but DND!
‘I agree with you a lot: I don’t know whether I agree completely, but DND!’

\(^1\) I wish to thank Maribel Romero for encouragement and guidance. Many thanks also to Elena Castroviejo, Lucas Champollion, Robin Clark, Avidi Eilam, Catherine Lai, Lance Nathan, Chris Potts, Tatjana Scheffler, Joshua Tauberer and the audience at WCCFL26 for comments and suggestions and to Mercè Pi for judgments.

\(^2\) In (1a), the structure “com V de Adj” (“how V of Adj”) is ambiguous between the interrogative and the exclamative reading. In contrast, the structure “que Adj que V” (“how Adj he/she/it V”) in (1b) is unambiguously exclamative in Catalan, unlike its counterpart in English in embedded contexts, which is ambiguous between the interrogative and the exclamative reading.
(4) **Déu n’hi do** qui va ballar amb qui  
DND who danced with who  
‘DND who danced with who’  

DND cannot appear preceding declaratives (see (5a)), even if they have the illocutionary force of an exclamative, as in (5b)

(5) a. * **Déu n’hi do** está plovent  
DND is raining  
‘DND is is raining’  
b. * **Déu n’hi do** sona tan bé!  
DND sounds so good!  
‘DND it sounds so good’

3. Background  
3.1 ‘Déu n’hi do’ in the literature

Sancho (2003), in his paper about Catalan interjections, argues that the basic function of DND “is that of emphasis or intensification” (Sancho, 2003:157). He also notes that DND can be followed by an exclamative and he claims that, in such cases, DND “only reinforces constructions which are emphatic by themselves” (Sancho, 2003:159). 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-Moll (1930) 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 improper interjection which expresses admiration or surprise.

In this paper, I will argue against both claims (1) that DND is an intensifier and (2) that DND is semantically redundant when it appears followed by an exclamative.

3.2 Semantics of exclamatives

The analysis of DND presented here assumes Zanuttini and Portner’s (2003) analysis of exclamatives. However, in principle, our analysis is independent of Zanuttini and Portner’s assumptions and it could be extrapolated to other analyses, namely those approaching exclamatives as degree constructions (see Castroviejo (2006) and Rett (2006)).

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 for the wh-operator. Let’s examine each element in turn:

1. The operator variable creates the denotation of a set of alternative propositions, as in questions (following Hamblin (1973), Karttunen (1977) and Groenendijk and Stokhof (1984) among others). Thus, in a context in which we are discussing what chili peppers our friend John likes to eat, the sentence in (6a), from Paduan, denotes a set of propositions of the form ‘he eats x’, with a contextual restriction on the domain of quantification. This propositional content is given in (6b). The current domain of quantification is the set of peppers D1, as specified in (6c).

(6) a. Che roba che l magna!  
What stuff that he eats  
‘The things he eats!’

b. \([\text{che roba che l magna}]_w = \{p:p \text{ true in } w \text{ and } \exists a [p = ‘he eats a’]\} = \{‘he eats poblanos’, ‘he eats serranos, ‘he eats jalapeños’\}\) (Zanuttini and Portner, 2003:52)  
c. D1 = {poblanos, serranos, jalapeños}
2. Let’s turn now to their second ingredient: widening. At an intuitive level, widening makes the domain of quantification bigger so that it now 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, D5. In each domain of quantification D, there is an ordering represented by [[S]] w,D,<. The widening process is such that the conditions in (7a) and (7b) hold:

(7) a. [[S]] w,D5,< − [[S]] w,D1,< ≠ ∅
    b. ∀x∀y((x ∈ D1 & y ∈ (D5 − D1)) → x < y)
    c. D5 = {poblano, serrano, jalapeño, güero, habanero}

That is, the difference between the widened domain D5 and the regular domain D1 is not empty; D5 adds something which was not in the previous domain D1. Besides, there is a particular ordering in the domains, such that the widened domain, D5, contains more extreme values. Continuing with the example in (6a), the widened domain D5 is a superset of D1, containing types of peppers with more extreme degrees of spiciness, such as the set in (7c).

3. The factive morpheme FACT will introduce the presupposition in (8a): all the propositions added to the denotation of the clause through evaluation in relation to the widened domain are true. Thus, the sentence in (6a) has the presupposition in (8b): John eats the hottest peppers, the ones contained in the widened domain, but not in the regular domain.

(8) a. ∀p ∈ [[S]] w,D5,< − [[S]] w,D1,< : p is true
    b. [[the things he eats]]w = ‘he eats güeros’, ‘he eats habaneros’

4. Differences between exclamatives and DND-clauses

There are three main differences between bare-exclamatives and DND-clauses:

A. Embeddability: Crosslinguistically, questions and exclamatives cannot embed under certain verbs which take propositions, such as ‘believe’ or ‘think’, as (9) and (10) show. In contrast, DND-clauses pattern like declarative sentences and can embed under certain verbs which take propositions, as shown in (11).

(9) * Crec que guapo que és el seu novio believe how cute that is his/her boyfriend ‘I believe how (very) cute his/her boyfriend is’
(10) * Crec com és de guapo el seu novio believe how is of cute his/her boyfriend ‘I believe how cute his/her boyfriend is’
(11) Crec que Déu n’hi do que guapo que és el seu novio believe that DND how cute that is his/her boyfriend ‘I believe that DND how cute his/her boyfriend is’

B. Answerhood: Bare-exclamatives cannot be used to answer questions, but DND-exclamatives can. The contrast is shown in (12).

(12) a. Com és d’alt?
    ‘How tall is he?’
    b. # Que alt que és!
    ‘How very tall he is!’
    b’ Déu n’hi do
    ‘DND’

3 Zanuttini and Portner (2003) call this widened domain D2. I call it D5 for expository purposes, as it will become clear once the analysis of DND is introduced.
C. **Extreme widening**: According to Zanuttini and Portner (2003), exclamatives convey a proposition that lies at the extreme end of some contextually given scale Thus, it is felicitous to deny this extreme widening or extreme degree, as (13a) shows. In contrast, a DND-exclamative is perfectly natural in this context (see 13b). Thus, DND attenuates the meaning of the exclamative it takes, conveying that the maximum has not been reached.

(13) a. **possibly:***

b. **Possibly:**

A consequence of this weakening is that, unlike exclamatives, DND-clauses, as the example in (14b), cannot be used as polite sentences.

5. Analysis of ‘Déu n’hi do’

5.1. **Déu n’hi do’s lexical meaning: encoding the lack of extreme widening**

My proposal is that DND’s lexical meaning is the encoding of lack of extreme values, or, following Zanuttini and Portner’s (2003) terminology, lack of extreme widening. This will be achieved by introducing a further domain of quantification, D3. DND presupposes that there is another domain of quantification, D3, which is a proper subset of D5 and a proper superset of D1, as defined in (15).

(15) \[ [[DND-CP]]_w \text{ is defined iff:} \]

\[ a. \ [CP]_{w,D3,<} - [CP]_{w,D1,<} \neq \emptyset \]

\[ b. \ [CP]_{w,D5,<} - [CP]_{w,D3,<} \neq \emptyset \]

\[ c. \ \forall x \forall y \forall z [(x \in D1 \& y \in (D3-D1) \& z \in (D5-D3)) \rightarrow x < y < z] \]

Thus, contra previous proposals, I claim that DND is not an intensifier, but rather a weakener. Previous proposals attributed to DND a meaning of intensification which is actually contributed by the exclamative it precedes.

Thus, modifying the example in (6) and turning it into a DND-exclamative would yield the assertion in (18). 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 D5, but not of D3.

(18) \[ [[DND the things he eats]]_w = \{ 'he eats güeros' \} \]

4 The level of meaning at which the expression in (17) holds is tentative and will be revised in Section 6.3.
There is a further component of meaning, a scalar conversational implicature, given in (19): all the propositions added to the denotation when the assignment function is evaluated with respect to D5 are false. That is, there is no extreme widening, which explains difference (C), mentioned in Section 4. Being a conversational implicature, it can be cancelled, as in (20), or reinforced, as in (13b) or in (3).

(19) \( \forall p \in [[ CP ]]_{w,D5,<} - [[ CP ]]_{w,D3,<} : p(w_0) = 0 \)

(20) Déu n’hi do quanta gent hi havia a la festa. De fet, hi era tothom
    ‘DND how many people there were at the party. Actually, everyone was there’

Thus, the scalar conversational implicature of the DND-exclamative in (18) is that it is false that John eats the habanero, the extremely spicy pepper which is contained in D5, but not in D3.

5.2 Semantic type

DND changes the semantic type of the exclamative or question it precedes: it takes the denotation of an exclamative or a question (type \(<<< st >t>>\)) and returns a proposition (type \(< st >>\)).

This type change explains both differences (A) and (B): since DND-clauses denote propositions, they can answer questions and embed under verbs such as “think” and believe”. Thus, if indeed the semantic type of a DND-clause is a proposition, we expect to find it in contexts which typically allow propositions. This is what we find in a variety of contexts, illustrated in (21a) through (24a): concessive sentences, consecutive sentences and the verbs ‘know’ and ‘believe’ can all syntactically embed DND-exclamatives, although they cannot embed bare-exclamatives, as the (b) examples show.

In the case of causal sentences, in (24), DND-exclamatives are grammatical, consistent with our hypothesis. However, ‘because’ seems to be able to embed not only propositions but also other semantic types, including that of bare-exclamatives, as can be seen with the grammaticality of (24b).

(21) a. Tot i que Déu n’hi do que llesta que és, va tornar a suspendre l’examen
    ‘Although DND how very smart she is, she failed the exam again’
    b. * Tot i que que llesta que és, va tornar a suspendre l’examen
    ‘Although how very smart she is, she failed the exam again’

(22) a. És tan maca que Déu n’hi do quants pretendents que té
    ‘She’s so cute that DND how many suitors she has’
    b. * És tan maca que quants pretendents que té!
    ‘She’s so cute that how many suitors she has’

(23) a. Ja sé/crec que Déu n’hi do quina nota més alta que ha tret a l’examen
    ‘I already know/believe that DND what a high grade you got at the exam’
    b. * Ja sé/crec que quina nota més alta ha tret a l’examen
    ‘I already know/believe that what a high grade you got at the exam’

(24) a. La Maria va caure perquè Déu n’hi do quanta gent hi havia a l’estadi
    ‘Maria fell down because DND how many people there was at the stadium’
    b. La Maria va caure perquè quanta gent hi havia a l’estadi!
    ‘Maria fell down because how many people there was at the stadium’

However, it is not the case that a DND-clause can appear in all contexts which can take propositions. There are some unexpected ungrammaticalities, illustrated in (25) through (27), of contexts which usually take propositions, such as antecedents of conditionals, operators of possibility or ‘know’ and ‘believe’ under negation:

(25) * Si Déu n’hi do quin novio més guapo que té, deu estar molt contenta
    ‘If DND what a cute boyfriend she has, she must be very happy’

DND-exclamatives are also ungrammatical in temporal clauses. This issue will not be further addressed here and it remains as a topic for future research.
(26) * Potser Déu n’hi do quin novio més guapo que té
   ‘Maybe DND what a cute boyfriend she has’
(27) * No crec/sé que Déu n’hi do quin novio més guapo que té
   ‘I don’t believe/know that DND what a cute boyfriend she has’

The source of these ungrammaticalities will be explained in Section 6.3, once levels of semantic meaning are taken into account.

6. Levels of meaning in exclamatives
6.1 Against presupposition in the semantics of exclamatives

Previous proposals have argued for the existence of a presupposition in the meaning of an exclamative. This is, for example, what Zanuttini and Portner (2003) propose. However, they do not provide any tests to give evidence for the existence of a presupposition, other than noting that exclamatives in English can only embed under factive verbs. Indeed, it is not easy to test for presuppositions in exclamatives because they cannot embed under the relevant contexts: for instance, they cannot be embedded in antecedents of conditionals and cannot be turned into a question.

The only test that seems applicable is the ‘hey, wait a minute’ test (von Fintel, 2004). The idea behind this test is the following: if a speaker utters a sentence with a presupposition which is not part of the shared knowledge with the addressee, the addressee can ‘complain’ of the fact that this part of the meaning is taken for granted, as it happens in the B response in (28). No such objection is possible if the meaning the speaker is conveying is not presupposed, but asserted. Thus, the B’ answer in (28) feels incoherent.

In (29), the exclamative does not pass the ‘hey, wait a minute’ test: the addressee cannot complain about the hypothetically presupposed meaning. Thus, as far as the ‘hey, wait a minute’ test goes, exclamatives do not pattern like typical examples of presuppositions.

(28) A: The mathematician who proved Goldbach’s Conjecture is a woman.
   B: Hey, wait a minute. I had no idea that someone proved Goldbach’s Conjecture.
   B’: # Hey, wait a minute. I had no idea that that was a woman.
(29) How tall John is!
   # Hey, wait a minute. I had no idea that he was very tall

For lack of other tests, I take this to be evidence against the presence of a presupposition in the meaning of exclamatives and, in the next section, another option will be explored.

6.2 Evidence for a conventional implicature in the semantics of exclamatives

Conventional implicatures (CI, henceforth) (Potts, 2005) are commitments which are logically independent of at-issue entailments and have the following properties:

A. Attribution: They are speaker-oriented. That is a primitive feature of CIs for Potts (2005). Kratzer (1999) presents some examples of CIs which do not seem speaker-oriented6, but which seem to be embedded under some other attitude-holder. Potts (2005) claims that quotation can explain the apparent embedding of those examples.

B. Semantic scopelessness: CI’s semantic content does not remain embedded; it does not stay under a semantic operator.

Potts (2005) has analyzed expressive adjectives (such as ‘bastard’ or ‘damn’) as conveying CIs. In sentences containing such adjectives (see (30a)), there is a clear distinction between the assertion, in (30b) and the CI, in (30c).

---

6 This is the example:
(i) My father screamed that he would never allow me to marry that bastard Webster.
(30)  a. That bastard Kresge is late for work
    b. Assertion: late(k)
    c. CI: bastard(k)

The multidimensionality of (30a) can be seen by the different behavior of both levels of meaning when the sentence is embedded under an operator. While the assertion can be semantically embedded under all types of operators, the CI cannot, it is scopeless. Thus, the negation of (30a), in (31a), is only negating the assertion and not the CI, as the incoherent continuation shows. The same point is made in (31b) with the sentence embedded under a possibility operator. (31c) does not have the reading that it would have if the CI were under the scope of the conditional. (31d) shows that at least some CIs in some contexts are clearly speaker-oriented and cannot embed under some other attitude-holder.

(31)  a. That bastard Kresge isn’t late for work. (# He’s a good guy.)
    b. Maybe that bastard Kresge will be late again. (# Then again, maybe he’s not a bastard).
    c. # If that bastard Kresge arrives on time, he should be fired for being so mean.
        Intended reading: ‘If Kresge arrives on time and is a bastard, he should be fired for being so mean’
    e. Sue believes that that bastard Kresge should be fired. (#I think he’s a good guy).

It is not easy either to test for the presence of CIs in exclamatives. Bonami and Godard (2005) offer several tests for an analysis of evaluative adverbs as conveying CIs. However, these tests cannot be applied to exclamatives, since they involve embedding in a context in which an exclamative cannot appear, such as in the antecedent of conditional or under the scope of a question or of negation.

However, the syntactic embeddability properties of DND turn out to be useful here. DND allows us to find some contexts in which a bare-exclamative would be ungrammatical, but a DND-exclamative is not. In these cases, we can test for the two semantic properties of CIs mentioned above: (a) attribution and (b) semantic scopelessness. These properties will be tested using DND-clauses syntactically embedded under causal because clauses.

A. Attribution:

(32a) is a plain assertion: the because clause is embedded under ‘believe’. Thus, the speaker may deny the embedded assertion without contradiction, as illustrated in the continuation of (32b).

(33a) shows a syntactically grammatical embedding of a DND-exclamative under a causal clause. However, the continuation in (33b) is not coherent. After uttering a DND-exclamatives, the speaker cannot deny its content. Thus, this shows that the meaning of the DND-clause does not remain under the attitude verb, but it is speaker-oriented.

(32)  a. Julia believes that Peter was late because there was a lot of traffic.
    b. but, actually, I know that there was not a lot of traffic that day

(33)  a. La Júlia creu que el Pere va arribar tard perquè Déu n’hi do quant de trànsit hi havia
        ‘Julia believes that Peter was late because DND how much traffic there was’
    b. # però, de fet, jo sé que no hi havia pas gaire trànsit aquell dia
       ‘but, actually, I know that there was not a lot of traffic that day’

Thus, DND-clauses show the typical behavior of (some) CIs in being speaker-oriented.

B. Scopelessness:

In a plain assertion, the semantic content syntactically embedded in the antecedent of a conditional remains semantically embedded and does not percolate up. (34) is an example of this: the because clause is under the scope of the conditional. The speaker can put in question the content under the conditional without contradiction. Thus, the continuation in parenthesis is not incoherent. This is not what we find with a DND-clause, as illustrated in (35). In (35), the because adjunct with the embedded
DND-exclamative is not just under the scope of the conditional: the speaker is conveying (1) that if there is a causal relationship between Maria falling and there being many people, the government should be responsible and (2) that there were many people at the stadium. Thus the continuation in parenthesis is not coherent: the speaker is contradicting what she said in the first sentence.

(34) If Maria fell down because there were too many people at the stadium, the government should be responsible. (But, actually, I am pretty sure that the stadium was not too crowded that day).

(35) Si la Maria va caure perquè Déu n’hi do quanta gent hi havia a l’estadi, el govern se n’auria de fer responsable (# Però, de fet, em sembla que aquell dia no hi havia pas gaire gent)
‘If Maria fell down because DND how many people there were at the stadium, the government should be responsible (#But, actually, I am pretty sure the stadium was not too crowded that day).’

Thus, the meaning conveyed in a DND-clause is not semantically embeddable, even in a context in which it is syntactically embeddable. In general, it is not possible to test for semantic embeddability in exclamatives due to their lack of syntactic embeddability. The syntactic properties of DND-clauses allow us to see that, in fact, exclamatives behave like CI items.

Summing up, my proposal is that the meaning of exclamatives previously placed at the level of presuppositions (Zanuttini and Portner, 2003) is actually a conventional implicature. It has some of the properties of conventional implicatures, such as being speaker-oriented and percolating up even in cases of syntactic embedding.

6.3 ‘Déu n’hi do’ again

In the light of the evidence for CIs in exclamatives, the lexical entry of DND (given above in (17)) needs to be modified to include both an assertion and a CI. This is the proposal:

1. Conventional implicature: all the propositions added to the denotation when the assignment function is evaluated with respect to D3 (the middle domain) are true, as in (36).

2. Assertion: same lexical entry as the CI (i.e. (36))

(36) \[[\text{DND-CP}]\] = \(\lambda w_0. \forall p \in [[\text{CP}]]_{w,D1,<} \rightarrow [[\text{CP}]]_{w,D1,<}: p(w_0) = 1\)

Thus, the proposal is that the same lexical entry is placed both at the level of assertion and of the CI. I argue that this duplication is needed in order to correctly derive the meaning of DND-exclamatives. Consider again example (33) above: the meaning conveyed by the DND-exclamative, repeated below as (37a), can be roughly paraphrased as (37b). This meaning is clearly a CI, since the speaker is conveying that this is true; that is, this content is not just staying under the scope of the attitude verb. However, this meaning also needs to be conveyed through an assertion since it is also part of Julia’s beliefs. The whole semantic content of (33) is paraphrased in (37c), in which the assertion is in italics and the CI underlined.

(37) a. Déu n’hi do quant de trànsit hi havia
‘DND how much traffic there was’

b. there was quite a lot of traffic (more than usually, although it could have been worse)

c. Julia believes that Peter was late because there was quite a lot of traffic and it’s true that there was quite a lot of traffic

Consider now the syntactic ungrammaticalities presented in (25) to (27). I argue that they can be explained by a clash between the asserted and the conventional meaning. The CI meaning always percolates up and it clashes with the assertion when the assertion is embedded under negation or some other operator that suspends its truth (as, for instance, a conditional or a possibility operator). Let’s see a specific example: DND under ‘maybe’, repeated below as (38a). The two relevant levels of meaning are paraphrased in (38b) and (38c) respectively.
(38) a. * Potser Déu n’hi do quin novio més guapo que té
   ‘Maybe DND what a cute boyfriend she has’

b. CI: ‘she has quite a cute boyfriend’

c. Assertion: ‘maybe she has quite a cute boyfriend’

While the CI is conveying that it is true that she has quite a cute boyfriend, the assertion is suspending the truth of this proposition, implicating that the speaker does not have complete knowledge. This is of course incompatible with the CI, which is conveying that the speaker does have this knowledge. In this type of environments (antecedent of a conditional or under operators of negation or possibility), the two levels of meaning clash and the embedding is not possible.

7. Conclusion

This paper has presented a formal analysis of the Catalan interjection ‘Déu n’hi do’ and its interaction with exclamative sentences.

I have argued that DND has the lexical meaning of a weakener, and not of an intensifier, and such lexical meaning is achieved by introducing a further domain of quantification, in between the regular domain and the widened domain. DND precedes exclamative sentences and changes its semantic type, from a set of propositions into a proposition and, thus, DND-exclamatives can be embedded in more contexts than bare-exclamatives. This syntactic embeddability allows us to test for semantic embeddability, which provides evidence for the level of conventional implicature in the meaning of exclamatives. The distribution and semantic behavior of DND-clauses can be explained once the interaction between asserted and CI meaning is taken into account.

References


Rett, Jessica. 2006. "Exclamatives are Degree Constructions". Handout, Rutgers Linguistics Conference (RULing).


7 The proposal about there being a conversational implicature remains exactly the same (see (19) and (20)).