

Catalan “Déu n’hi do” and Conventional Implicatures in Exclamatives^{*}

Laia Mayol

University of Pennsylvania
laia@ling.upenn.edu

Abstract

This paper presents a formal semantic analysis of the Catalan interjection ‘Déu n’hi do’ (DND, henceforth) and its interactions with exclamative sentences. The analysis of DND in a nutshell is that (1) it has the lexical meaning of weakening and not of intensification, contrary to previous approaches in the literature and (2) it changes the semantic type of the exclamative sentence it precedes, turning a set of propositions into a proposition. Since DND-exclamatives can syntactically embed in more contexts than bare exclamatives, they provide evidence that part of the meaning of exclamatives is conveyed through a Conventional Implicature (CI). Finally, the syntactic distribution and semantic behavior of DND-clauses in embedded contexts can be explained by the interaction between the asserted and the CI meaning.

Key words: Exclamatives, Conventional Implicature, Levels of Meaning, Particles, Interjections.

Table of Contents

1. Introduction	5. Analysis DND
2. ‘Déu n’hi do’ and its syntactic distribution	6. Levels of meaning in exclamatives
3. Background	7. Conclusions and further issues
4. Differences between Exclamatives and DND clauses	References

* I wish to thank Maribel Romero for encouragement and guidance. Many thanks also to Elena Castroviejo, Lance Nathan, Chris Potts, Tatjana Scheffler and the audience at WCCFL26 for comments and suggestions, to Lucas Champollion and Kimiko Nakanishi for data and to Mercè Pi for judgments. Special thanks to Catherine Lai for proof-reading this paper and to the two reviewers for their very useful comments.

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” (DND, henceforth), which resulted from the grammaticalization of the sentence in (1):

- (1) (que) Déu n’hi do(ni)
 that God of it-him/her give-subjunctive
 ‘May God give it to him/her’

The second goal of the paper is to explore the relationship between DND and exclamatives. The study of DND sheds some light on the semantic properties of exclamative sentences and provides evidence for the existence of different levels of meaning in exclamatives, which is something impossible to test for without this particle.

The paper is structured as follows. Section 2 presents the syntactic distribution of DND; Section 3 contains background about the semantics of exclamatives and previous claims about DND in the literature; Section 4 discusses the main differences between bare exclamatives and DND-clauses; Section 5 presents a tentative analysis of DND, from which some puzzles arise; Section 6 shows the evidence for different levels of meaning in exclamatives, using DND-clauses 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 (2), nominal, as in (3), or elliptic, as in (4).¹ In example (5), DND precedes a question.

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

1. I use the label ‘nominal exclamatives’ for those exclamatives containing a nominal head. In contrast, ‘elliptic exclamatives’ is used for those cases in which all the syntactic material, and not only the VP, has been elided.

- (4) Estic molt d’acord amb tu: no sé si del tot,
 am very of-agree with you: no know if totally,
 però **Déu n’hi do!**
 but DND!
 ‘I agree with you a lot: I don’t know whether I agree completely, but DND!’
- (5) Déu n’hi do qui va ballar amb qui.
 DND who PAST dance with who
 ‘DND who danced with who.’

In (2a), 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 (2b) is unambiguously exclamative in Catalan, unlike its counterpart in English in embedded contexts, which is ambiguous between the interrogative and the exclamative reading.

DND cannot appear preceding declaratives (see (6a)), even if they have the illocutionary force of an exclamative, as in (6b)

- (6) a. *Déu n’hi do és alt.
 DND is tall
 ‘DND he is tall.’
- b. *Déu n’hi do és tan alt!
 DND is so tall
 ‘DND he is so tall!’

3. Background

3.1 ‘Déu n’hi do’ in the literature

There are not many references to DND in the literature. Sancho (2003), in his article about three Catalan interjections, argues that DND is an intensifier, “que té com a funció emfasitzar” (‘whose function is that of emphasis’, Sancho 2003:157). He also notes that DND can be followed by an exclamative and he claims that in such cases, DND “es limita a reforçar construccions ja per elles mateixes emfàtiques” (‘only reinforces constructions which are emphatic by themselves’, Sancho 2003:159). The idea of DND’s basic function being one of intensification is recurrent in the dictionaries that attempt to define its meaning. For example, the classical Catalan dictionary Alcover-Moll (1961) defines DND in the following way: “S’usa com a exclamació ponderativa, emfàtica, per a expressar la grandària o importància d’una cosa o l’admiració que ens produeix” (‘It is used as 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 both against the 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 assumes Zanuttini and Portner's (2003) analysis of exclamatives. However, in principle, my analysis is independent of Zanuttini and Portner's assumptions and it could be extrapolated to other analyses, such as 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 the following three elements in order to derive the semantics of exclamatives. Syntactically, exclamatives contain (1) a *wh*-operator-variable structure and (2) an abstract factive morpheme *fact*. Moreover, there is (3) a process of widening of the domain of quantification for the *wh*-operator. Let's examine each element in turn.

The operator variable creates the denotation of a set of alternative propositions, as in questions (following Hamblin 1973, Karttunen 1977, Groenendijk and Stokhof 1984 and others). Thus, in a context in which we are discussing what chili peppers our friend John likes to eat, the sentence in (7a), from Paduan, denotes a set of propositions of the shape 'he eats *x*', with a contextual restriction on the domain of quantification. This propositional content is given in (7b). The current domain of quantification is the set of peppers *D1*, as specified in (7c).

- (7) a. Che roba che l magna! (Zanuttini and Portner 2003, ex. (27))
 What stuff that he eats
 'The things he eats!'
- b. $[[\text{che roba che l magna}]_w] = \{p: p \text{ is true in } w \text{ and } \exists a [p = \text{'he eats } a']\} = \{\text{'he eats poblanos'}, \text{'he eats serranos'}, \text{'he eats jalapeños'}\}$ (Zanuttini and Portner 2003: 52)
- c. $D1 = \{\text{poblanos}, \text{serranos}, \text{jalapeños}\}$

Let's turn now to their second ingredient: widening. At an intuitive level what widening does is to make the domain of quantification bigger so that it now includes things we otherwise would not have considered, with a more extreme value. More formally, for any clause *S* containing widening, the initial domain of quantification, *D1*, is widened to a new domain of quantification, *D5*.² In each domain *D*, there is an ordering represented by $[[S]]_{w,D,<}$. The widening process is such that the following two conditions hold:

- (8) a. $[[S]]_{w,D5,<} - [S]_{w,D1,<} \neq \emptyset$
 b. $\forall x \forall y [(x \in D1 \& y \in (D5-D1)) \rightarrow x < y]$

That is, the difference between the widest domain *D5* and the regular domain *D1* is not empty; *D5* adds something which was not in the previous domain *D1*. In addition, there is a particular ordering on the domains, such that the widened domain,

2. Zanuttini and Portner (2003) call this widened domain *D2*. I call it *D5* for expository purposes, as will become clear once the analysis of DND is introduced.

D5, contains more extreme values. Continuing with the example in (7), the widened domain D5 is a superset of D1, containing types of peppers with more extreme degrees of hotness, such as: $D5 = \{\text{poblano, serrano, jalapeño, güero, habanero}\}$.

The factive morpheme *fact* will introduce the presupposition in (9a): all the propositions added to the denotation of the clause through evaluation in relation to the widened domain are true. Thus, the sentence in (7a) has the presupposition in (9b): John eats the hottest peppers, the ones contained in the widened domain, but not in the regular domain.³

- (9) a. $\forall p \in [[S]]_{w,D5,<} - [[S]]_{w,D1,<} : p \text{ is true}$
 b. $[[\text{the things he eats}]]_w = \{\text{'he eats güeros', 'he eats habaneros'}\}$

To sum up Zanuttini and Portner's (2003) proposal, exclamatives have alternative semantics (just like questions) and their factivity is syntactically encoded by a factive morpheme, which introduces a presupposition. The sentential force of exclamatives is one of widening the domain of quantification (as opposed to asserting, questioning or commanding), so that the presupposition they introduce is placed in this widened domain. This is what achieves the effect of 'unexpectedness', 'speaker's strong feelings' or 'extreme degree' that exclamatives have been claimed to convey.

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 (10) and (11) show. In contrast, DND patterns like a declarative sentence and can embed under certain verbs which take propositions, as in (12). (12b) and (12c) are naturally-occurring examples: in (12b) the exclamative ('what a good job it is doing') has been elided; in (12c) DND is followed by a nominal exclamative.

- (10) *Crec que guapo que és el seu novio.
 believe how cute that is the his/her boyfriend
 'I believe how (very) cute his/her boyfriend is.'

3. One of the reviewers notes that the mechanism of widening runs into trouble when the exclamative contains a downward entailing quantifier, as in (i):

- (i) Que pocs articles que ha escrit!
 What few papers that has written
 'What a little amount of papers he has written!'

In order to achieve the correct semantics, there needs to be a narrowing, and not a widening, of the domain, so that the exclamative presupposes that the number of articles he/she wrote was low, below the expected number of articles. How should the quantifier achieve this narrowing effect is an interesting problem for Zanuttini and Portner's (2003) proposal, beyond the scope of this paper.

- (11) *Crec com és de guapo el seu novio.
believe how is of cute the his/her boyfriend
'I believe how cute his/her boyfriend is.'
- (12) a. 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. Podríem discutir durant anys sobre si la Fundació Bill i Melinda Gates fa molt el bé o no el fa tant, jo crec que Déu n'hi do, però aquesta no és la qüestió.⁴
'We could argue about whether Bill and Melinda Gates Foundation is doing a good job or not for years, I believe that DND, but this is not the matter.'
- c. Jo penso que Déu n'hi do la feina que ha fet la Generalitat.⁵
'I believe that DND the work the government has done.'

B. *Answerhood*: Bare exclamatives cannot be used to answer questions, but DND-exclamatives can. The contrast is shown in (13):

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

C. *Lack of 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 somewhat infelicitous to deny this extreme widening or extreme degree, as (14a) shows. In contrast, a DND-exclamative is perfectly natural in this context (see 14b). In fact, an informal corpus search returns many examples in which this lack of extreme widening is made explicit (see (14c-d)). Thus, DND attenuates the meaning of exclamative, conveying that the maximum has not been reached and this lack of extreme widening is very usually explicitly reinforced in DND-clauses.

4. <<http://blog.bitassa.cat/arxiu/2006/05/09/481/>> Accessed September 12th 2007

5. <www.adigsa.org/entrebarrispdf/entrebarris15.pdf> Accessed September 12th 2007

- (14) a. ??Que alt que és! Tanmateix, no és extremadament alt.
 ‘How tall he is! However, he’s not extremely tall’
- b. Déu n’hi do que alt que és! Tanmateix, no és extremadament alt.
 ‘DND how tall he is! However, he’s not extremely tall’
- c. El crèdit m’ha anat creixent no diré com una planta silvestre però Déu n’hi do.⁶
 ‘My debt has grown, I won’t say as a wild plant, but DND’
- d. La veritat és que és una ciutat bastant gran, no tant com Barcelona però Déu n’hi do!⁷
 ‘[Talking about Zaragoza] The truth is that it is quite a big city, not as big as Barcelona, but DND!’

A consequence of this weakening is that, unlike exclamatives, DND-clauses, as the example in (15b), cannot be used as polite sentences.

- (15) a. Quin sopar més bo!
 ‘What a nice dinner!’
- b. Déu n’hi do quin sopar més bo! (#as a polite sentence)
 ‘DND what a nice dinner!’

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

5. Analysis of DND

5.1. Lexical meaning of DND: 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 presupposes⁸ that there is another domain of quantification, D3, which is a proper subset of D5 and a proper superset of D1, as defined in (16).

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

$$(a) [[\text{CP}]]_{w,D3,<} - [[\text{CP}]]_{w,D1,<} \neq \emptyset$$

6. <<http://www.andreusotorra.com/lenapauls/comentaris.html>> Accessed 12th September 2007

7. <<http://blocs.tinet.cat/blog/turisbloc-el-bloc-de-la-biblioteca-de-l-euto-urv>> Accessed 12th September 2007.

8. I understand presuppositions as special preconditions that must be met for a linguistic expression to have a denotation (see Beaver (1997) for an overview of this phenomenon).

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

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

$$(17) D3 = \{\text{poblano, Serrano, jalapeño, güero}\}$$

The domain D3 needs to be bigger than D1 (condition (a)) and smaller than D5 (condition (b)). Also, there continues to be an ordering on the domains (condition (c)), so that D1 contains the least extreme values, D5 contains all values, including the more extreme values and D3 falls in the middle of the other two domains. This middle domain D3 may look like the set specified in (17).

The (tentative) assertion of a DND clause is given in (18).⁹ All the propositions added to the denotation when the assignment function is evaluated with respect to D3 (the middle domain) are true.

$$(18) [[DND-CP]]_w = \forall p \in [[CP]]_{w,D3,<} - [[CP]]_{w,D1,<} : p=1 \quad (\text{tentative})$$

Thus, modifying the example in (7) and turning it into a DND-exclamative would yield the assertion in (19). That is, the assertion is that John eats mildly hot peppers, but it says nothing about the habanero, the super hot pepper which is a member of D5, but not of D3.

$$(19) [[DND\text{-the things he eats}]]_w = \{\text{'he eats güeros'}\}$$

There is a further component of meaning, a scalar conversational implicature, given in (20): 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 (21), or reinforced, as in (4) or (14b-d).

$$(20) \forall p \in [[CP]]_{w,D5,<} - [[CP]]_{w,D3,<} : p = 0$$

$$(21) \text{D  u n'hi do quanta gent hi havia a la festa. De fet, hi era tothom} \\ \text{'DND how many people there were at the party. Actually, everyone was there'}$$

Thus, the scalar conversational implicature of (19) is that it is false that John eats the habanero, the super hot 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 $\langle\langle st \rangle t \rangle$) and returns a proposition (type $\langle st \rangle$).

9. The level of meaning at which the expression in (18) holds is tentative and will be revised in Section 6.3.

This type change explains both differences (A) and (B): since DND-clauses denote propositions, they can answer questions and embed under “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 indeed what we find in a variety of contexts, illustrated in (22a) through (25a): concessive sentences, consecutive sentences and the verbs ‘know’ and ‘believe’ all can syntactically embed DND-exclamatives, although they cannot embed bare exclamatives, as the (b) examples show. In the case of causal sentences, DND-exclamatives are grammatical, consistent with our hypothesis. However, ‘because’ seems to be able to embed not only proposition but also other semantic types, including the one of bare exclamatives, as can be seen by the grammaticality of (25b).¹⁰

Concessive sentences

- (22) 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’

Consecutive sentences

- (23) 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!’

Under ‘know’ or ‘believe’

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

Causal sentences

- (25) 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!’

10. One of the reviewers found this sentence odd, while it is grammatical for me. There was no consensus among my informants. If we take (25a) to be ungrammatical, then clausal sentences just follow the pattern of the other subordinate sentences presented so far. However, it should not be surprising that ‘because’ is able to embed bare exclamatives, since it is able to embed not only propositions, but a wider range of semantic types, such as speech acts (see Bach 1994 and Scheffler 2005) or rhetorical questions.

However, it is not the case that a DND-clause can appear in all the contexts which can take propositions. There are some unexpected ungrammaticalities, illustrated in (26) through (28):¹¹

Antecedent of conditionals

- (26) *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.'

Under 'maybe' or 'it is possible'

- (27) *Potser Déu n'hi do quin novio més guapo que té.
'Maybe DND what a cute boyfriend she has.'

'Believe' and 'know' under negation (in contrast with (23))

- (28) *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. However, the empirical generalization seems to be the following: the proposition *p* expressed by DND+Exc cannot be the argument of an operator that suspends the truth of *p* and it can be the argument of an operator that does not suspend the truth of *p*.¹²

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. They give two pieces of evidence for the existence of a presupposition: (1) exclamatives in English can only be embedded under factive verbs and (2) exclamatives are not good answers to questions (Grimshaw 1979).¹³ However, it is not easy to apply the classical tests for presuppositions, using embedded contexts (Dowty 2006), because exclamatives cannot be embedded under the relevant contexts: for instance, they cannot be embedded in antecedents of conditionals, under possibility modals or cannot be turned into a question.

The only test that seems applicable is the 'hey, wait a minute' test (von Stechow 2004). If a speaker utters a sentence with a presupposition which is not part of the

11. DND-exclamatives are also ungrammatical in temporal clauses, as (ii) shows:
(ii) Des que Déu n'hi do quin novio més guapo que té la Maria, està més contenta.
'Since DND what a cute boyfriend Maria has, she is happier.'

This issue will not be further addressed here and it remains a topic for future research.

12. One of the reviewers notes that the contexts in (26)–(28) are non-factive. However, it is not the case that plain factivity can explain these distributional facts because DND-clauses are grammatical under some non-factive operators such as 'believe' (see (24)).

13. Thanks to one of the reviewers for pointing this out.

shared knowledge with the addressee, the addressee can ‘complain’ of the fact that this part of the meaning is taken for granted, as happens in B’s response in (29). No such objection is possible if the meaning the speaker is conveying is not presupposed, but asserted. Thus, the B’ answer in (29) feels incoherent. In (30) the exclamation 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 presupposition.¹⁴

- (29) 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.
- (30) A: How tall John is!
 B: #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. This is a primitive feature of CIs for Potts (2005)¹⁵.
- B. Semantic scopelessness: The semantic content of CI cannot remain embedded under any operator.

14. One of the reviewers points out that the test seems to work with a downward entailing quantifier in the exclamation, such as in (iii):

(iii) A: Que pocs articles que ha escrit!
 What few papers that has written

B: Hey, wait a minute. I had no idea that he had written any.

An explanation of why this discourse passes the test could be that quantificational noun phrases presuppose a non-trivial domain of quantification (see Beaver 1997 and the references therein). Thus, the fact that a ‘hey, wait a minute’ answer is felicitous here has nothing to do with the exclamation, but with the quantifier ‘pocs’.

15. Kratzer (1999) presents some examples of CIs in the scope of a verbum dicendi which do not seem speaker-oriented, but which seem to be embedded under some other attitude-holder, such as in (iv).
 (iv) My father screamed that he would never allow me to marry that bastard Webster.
 Potts (2005) claims that these cases of apparent embedding are quotative utterances; its quotative nature needs to be signaled in some special way (i.e. heavy emphasis on the adjective in speech,

Potts (2005) has analyzed expressive adjectives (i.e. *bastard* or *damn*) as conveying CIs. In sentences containing such adjectives (see (31)), there is a clear distinction between the assertion and the CI.

(31) a. That bastard Kresge is late for work.

b. Assertion: late(k)

c. CI: bastard(k)

While the assertion can be embedded under all type of operators, the CI cannot, it is scopeless. Thus, the negation of (31a), in (32a), is only negating the assertion and not the CI, as the incoherent continuation shows. (32c) does not have the reading that it would have if the CI were under the scope of the conditional. (32d) shows that at least some CIs in some contexts are clearly speaker-oriented and cannot embed under some other attitude-holders.

(32) 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."

d. Sue believes that that bastard Kresge should be fired. (#I think he's a good guy.)

Bonami and Godard (2005) offer several tests to show that evaluative adverbs convey a CI meaning. Their main idea is that, since the contribution of a CI to the meaning of a sentence is not computed in the at-issue meaning, a sentence with a CI item should be truth-conditionally equivalent to a sentence without it (or in other words, CIs are semantically scopeless). The contexts in which Bonami and Godard (2005) test this property are the following:

Antecedent of conditionals: the truth-conditions of (33a) and (33b) are the same, the adverb is not embedded under the conditional (Bonami and Godard 2005: ex. (18)):

quotation marks in print). Also, in virtue of being quotative, the adjective can be attributed to an entity not mentioned in the sentence, and different from the speaker, as in (v).

(v) a. Sue: John's landlord is a fucking scoutmaster.

b. Eddie: Well, John wouldn't say that his landlord is a 'fucking' scoutmaster. He rather admires scoutmasters, and so do I. (Potts 2005: ex.(5.18))

The adjective in (vb) is not attributed neither to John nor to the speaker, but it is a quotation of what Sue had previously said.

- (33) a. Si Paul va voir Marie, elle sera furieuse.
 ‘If Paul visits Mary, she will be furious.’
- b. Si Paul, malheureusement, va voir Marie, elle sera furieuse.
 ‘If Paul, unfortunately, visits Mary, she will be furious.’
 Intended meaning if the adverb were embedded: ‘If it is unfortunate that Paul visits Mary, she will be furious.’

Questions: CI items cannot be embedded under a question. In (34), the adverb is not part of the question, but rather it is a side comment of the speaker that insofar someone arrived on time, it is strange that he/she arrived on time (Bonami and Godard 2005: ex. (11a)):

- (34) Qui est, bizarrement, arrivé à l’heure?
 ‘Who did strangely arrive on time?’

Denial: CI items cannot be denied with a plain negation (see the contrast between (35) and (36)), although they can be explicitly denied, while the at-issue meaning is accepted, as in (36b’) (Bonami and Godard 2005: ex. (19-21)):

- (35) a. Paul a perdu l’élection.
 ‘Paul lost the elections.’
- b. Non, c’est faux, on en tout cas, ce n’est pas ce que j’ai entendu.
 ‘No, that’s not true, or, at least, that’s not what I’ve heard.’
- (36) a. Paul a malheureusement perdu l’élection.
 ‘Paul has, unfortunately, lost the elections.’
- b. #C’est faux, je trouve que c’est une très bonne nouvelle.
 ‘That’s not true, I think this is really good news.’
- b’. Oui, c’est vrai, mais moi, je trouve que c’est une très bonne nouvelle!
 ‘Yes, that’s true, but I think this is really good news!’

Negation: Evaluative adverbs cannot be under the scope of negation, while other adverbs which do not convey a CI can.

- (37) a. *Paul n’est pas malheureusement venu.
 ‘Paul did not unfortunately come.’
- b. Paul n’est pas forcément venu.
 ‘Paul did not necessarily come.’

Unfortunately, these tests cannot be applied to exclamatives, since they involve embedding in a context in which an exclamative cannot appear due to its restricted syntactic distribution, such as in the antecedent of conditionals or under the scope of a question or 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 exclamation would be ungrammatical, but a DND-exclamation is not. Since it is not possible to test directly on bare exclamatives, their properties as CI items come to light only when we use this special type of exclamatives, DND-clauses. Using DND-clauses, we can test for the two semantic properties of CIs mentioned above: (a) attribution and (b) semantic scopelessness. These properties will be tested on DND-clauses syntactically embedded under causal *because* clauses.

Apart from the arguments from semantic behaviour, I present a further argument in favour of the CI analysis: (c) DND-clauses have a similar syntactic distribution as other items that have been analyzed as conveying CIs.

A. *Attribution*: (38) is a plain assertion: the *because* clause is embedded under 'believe'. Thus, the speaker may deny the embedded assertion without contradiction, as illustrated in (38b).

- (38) 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.

(39) shows a syntactically grammatical embedding of a DND-exclamation under a causal clause. However, semantically, the meaning of the DND-clause does not remain under the attitude verb, but rather is speaker-oriented. In (39a), the speaker is committing himself to the content of the DND-clause and, thus, the continuation in (39b) is not coherent.

- (39) 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)¹⁶ 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. (40) 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 contradicting himself. Thus, the continuation in parenthesis is not incoherent.

16. See the discussion in footnote 15.

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

This is not what we find in (41). In (41), 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.

- (41) Si la Maria va caure perquè Déu n’hi do quanta gent hi havia a l’estadi, el govern se n’hauria 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 semantic embeddability in exclamatives due to their lack of syntactic embeddability. But the syntactic properties of DND-clauses allow us to see that, in fact, exclamatives behave like CI items.

C. *Similar syntactic distribution to other CIs*: Other items that have been analyzed as conveying CIs show similar syntactic restrictions to those of DND-exclamatives. Namely, I will show examples from evaluative adverbs (such as *obviously*), from Japanese contrastive and evidential markers and from the German discourse marker *ja*. The following contexts will be used to illustrate the pattern: causal clauses, concessive clauses, the antecedent of conditionals and under *not know*. The mentioned items, like DND-clauses, are grammatical in the former two contexts and ungrammatical in the latter two contexts.

As mentioned, evaluative adverbs, such as ‘obviously’, have been analyzed as conveying CIs (Bonami and Godard 2005). (42) illustrates the division between assertion and CI (example from Tredennick 2004): the assertion is stating that Mary is upset because of the fact that John doesn’t love her (not because this lack of love is obvious); the CI is the speaker’s comment about John’s lack of love being obvious.

- (42) a. Mary is upset because obviously John doesn’t love her.
 b. Assertion: cause(upset(mary), ¬love(john, mary))
 c. CI: obvious(¬love(john, mary))

(43) illustrates the restrictions on the syntactic distribution of this evaluative adverb: it is grammatical in causal and concessive clauses, but ungrammatical in the antecedent of conditionals and under ‘not know’, exactly like DND-exclamatives (see examples (22a), (25a), (26) and (28)).

- (43) a. Mary is upset because obviously John doesn’t love her.
 b. Although John obviously doesn’t love her, Mary seems happy.
 c. *If obviously John doesn’t love her, Mary must be upset.
 b. *I don’t know whether obviously John loves Mary.

Hara (2006a, b) analyzes the contrastive marker *wa* and the evidential marker *souna/souda*¹⁷ as conveying CIs. As for the morpheme *wa*, it is involved in contrastive-marking in Japanese along with a prosodic peak. A sentence with this morpheme carries a particular implicature, as (44) shows.

- (44) a. Among John and Mary, who came to the party?
 b. JOHN-*wa* kita.
 ‘John came. (Mary didn’t come or I don’t know about Mary.)’

Hara (2006b) splits this meaning in two different levels: an assertion and a Conventional Implicature:¹⁸

- (45) a. Assertion: John came.
 b. CI: the speaker considers the possibility that ‘John and Mary came’ is false.

As for evidentials, they convey that the proposition is uttered on some reported evidence (*hearsay* evidence). Hara (2006a) reports that these two particles (contrastive and evidential markers) also behave differently depending on the type of adjunct clause they appear in. Example (46) shows how the contrastive marker *wa* is grammatical in causal and concessive sentences (46a-b) and ungrammatical in conditionals or under ‘not know’ (46c-d). (47) shows the same distributional facts with the evidential marker.¹⁹ Thus, these Japanese markers pattern as other CI items, such as evaluative adverbs and DND.

17. *Souna* and *souda* are two morphological variants of the same marker.

18. See Hara (2006b) for the formalization and the technical details.

19. Examples (a) and (c) are from Hara (2006a). Examples (b) and (d) are from Kimiko Nakanishi (p.c.).

- (46) a. Itsumo uchi-ni John-wa kuru node
 Always house-Dat John-Con come because
 oyatsu-o youi-su-ru.
 sweets-Acc prepare-do-Pres
 ‘Because (at least) John comes to our house, I always prepare sweets.’
- b. John-wa hon-o 3-satsu-wa yonda-kedo,
 John-top book-Acc 3-Class-Con read-although
 gookakusi-nakat-ta.
 pass-Neg-Past
 ‘Although John read (at least) 3 books, he did not pass.’
- c. *Moshi John-ga hon-o 3-satu-wa yom-eba,
 if John-Nom book-Acc 3-Class-Con read-Comp
 goukaku-suru.
 pass-do
 ‘If John reads (at least) 3 books, he will pass.’
- d. *John-ga hon-o 3-satu-wa yon-da-kadooka
 John-Nom book-Acc 3-Class-Con read-Past-whether
 sir-anai.
 know-NEG
 ‘I don’t know whether John read (at least) 3 books.’
- (47) a. Kodomo-ga kuru souna node, oyatsu-o youi-shita.
 children-Nom come Evid because, sweets-Acc preparation-did
 ‘Because children are coming (I heard), I prepared sweets.’
- b. Kodomo-ga kuru souda kedo, oyatsu-o yooisi-teinai.
 children-Nom come Evid although sweets-Acc prepare-Neg
 ‘Although children are coming (I heard), I haven’t prepared any sweets’
- c. *Kodomo-ga kuru souna raba, oyatsu-o youi-shita.
 children-Nom come Evid Comp, sweets-Acc preparation-do
 ‘If children are coming (I heard), I will prepare sweets.’
- d. *Kodomo-ga kuru sou-kadooka sir-anai.
 children-Nom come Evid-whether know-NEG
 ‘I don’t know whether children are coming (I heard).’

Finally, the German discourse marker *ja* replicates the same pattern. Kratzer (1999) defines this particle as follows: “*Ja* α is appropriate in a context *c* if the proposition expressed by α in *c* is a fact of w_c which –for all the speaker knows– might already be known to the addressee”. *Ja* is a CI expressive, whose contribution is placed in a different level from the assertion. Example (48) shows the familiar distributional pattern: the CI item is grammatical in causal and concessive clauses, but not in the antecedent of conditionals and under ‘not know’.

- (48) a. Stacie hat ihren Job verloren,
 Stacie has her job lost
 weil sie ja in der Gewerkschaft war.
 because she JA in th union was
 'Stacie lost her job, because she was JA in the union.'
- b. Stacie hat ihren Job verloren
 Stacie has her job lost
 obwohl sie ja sehr hart gearbeitet hat.
 although she JA very hard worked has
 'Stacie lost her job, although she JA worked very hard.'
- c. *Wenn Stacie ja ihren Job verloren hat,
 if Stacie JA her job lost has
 muss sie traurig sein.
 must she sad be
 'If Stacie JA lost her job, she must be sad.'
- d. *Ich weiss nicht, ob sie ja ihren Job verloren hat.
 I know not, whether she JA her job lost has
 'I don't know whether she JA lost her job.'

Thus, different items analyzed as conveying CIs show the same behavior in subordinate clauses crosslinguistically. My explanation of the facts regarding DND-clauses is discussed in Section 6.3;²⁰ here I just wanted to point out the similar behavior of CI items, which gives support to the analysis of DND-exclamatives as conveying meaning at a CI level.

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 percolating up even in cases of syntactic embedding and being speaker-oriented. It also shares syntactic distribution with items that convey a CI.

6.3 'Déu n'hi do' again

In the light of the evidence for a CI level in the meaning of exclamatives, the lexical entry of DND-clauses (given above in (18)) needs to be modified to include both an assertion and a CI. This is the proposal:

- Conventional Implicature: all the propositions added to the denotation when the assignment function is evaluated with respect to D3 (the middle domain) are true.

$$(49) [[\text{DND-CP}]]_w = \forall p \in [[\text{CP}]]_{w,D3,<} - [[\text{CP}]]_{w,D1,<} : p=1$$

- Assertion: same as the CI (i.e. (49))

20. See Hara (2006a) for an explanation of the Japanese data based on the semantic types of adjunct clauses.

Thus, the proposal is that the same semantics is placed both at the level of assertion and of CI. I argue that this is needed that to correctly derive the meaning of DND-exclamatives. Consider example (39a) above; the meaning conveyed by the DND-exclamative, repeated below as (50a), can be roughly paraphrased as (50b). This meaning is clearly a CI, since the speaker is conveying that this was true, that is, this content is not just staying under the scope of ‘believe’, as the infelicitous continuation in (39b) showed. In addition, this meaning also needs to be conveyed through an assertion since it is also part of the beliefs of the entity denoted by the subject of the sentence. The whole semantic content of (50a) is paraphrased in (50c), in which the assertion is in italics and the CI is underlined.

- (50) 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 usual, 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’*

The same meaning is both the plain assertion of the sentence and a speaker-oriented, scopeless meaning, conveyed with a CI.

Let’s consider now the syntactic ungrammaticalities presented in (26) to (28), in the antecedent of conditionals, under possibility operators and under ‘not believe’ or ‘not know’. 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 (51a). The two relevant levels of meaning are paraphrased in (51b) and (51c) respectively: they are equivalent, except for the fact that the CI is scopeless and, therefore, is able to escape the possibility operator.

- (51) a. *Potser Déu n’hi do quin novio més guapo que té
 Maybe DND which boyfriend more cute she has
 ‘*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 she has quite a cute boyfriend, the assertion is suspending the truth of this proposition, implicating that the speaker does not have complete knowledge, which is of course incompatible with the CI, which is conveying that the speaker does have this knowledge. In these types of environment (antecedent of a conditional or under operators of negation or necessity), the two

levels of meaning clash and the embedding is not possible.²¹ Note that the clash will not occur in factive environments and also in non-factive environments which do not suspend the truth of the propositions (such as 'believe').

An interesting issue is why natural language should provide a means to place the same semantics in two different levels of meaning and what is the communicative purpose of such a move. Although I do not have a complete answer to this question, it should be noted that the appearance of the same meaning at the CI and assertion level is not redundant and that it allows expressing a complex meaning very economically (see example (39a) and its explanation in (50)).

7. Conclusion and further issues

This paper has presented a formal analysis of the Catalan interjection 'Déu n'hi do' and of 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. DND-clauses show the typical behaviour of CIs in being speaker-oriented and being scopeless and they also show the same distribution as other CI items: namely, evaluative adverbs in English and discourse markers in Japanese and German. The distribution and semantic behavior of DND-clauses can be explained once the interaction between asserted and CI meaning is taken into account. The CI meaning does not stay semantically embedded under any operator and the speaker is committing herself to the truth of the proposition expressed by the DND-clause. Thus, the DND-clause cannot be embedded under any operator that suspends the truth of this proposition.

Recent work in semantic theory has shown the need for different levels of meaning, as well as its different properties and complicated interaction patterns (see Potts 2005 and Scheffler 2007). Embeddability facts are one of the main tools used in order to tease apart the different dimensions of meaning. This work follows the same line of research applying it to a construction, exclamative sentences, difficult to analyze given its restrictions in embeddability.

21. The proposal about there being a conversational implicature encoding the lack of extreme widening remains exactly the same: i.e. (51a) conversationally implicates that her boyfriend is not extremely cute (see also (20) and (21)).

References

- Alcover, Antoni Maria; Moll, Francesc de Borja (1930-1962). *Diccionari català-valencià-balear* (DCVB). Palma de Mallorca: Moll.
- Bach, Kent (1994). “Conversational Implicature”. *Mind and Language* 9(2): 124-162.
- Beaver, David (1997). “Presupposition”. In: van Benthem, Johan; ter Meulen, Alice (eds.). *The Handbook of Logic and Language*. Amsterdam: Elsevier, pp. 939-1008.
- Bonami, Olivier; Godard, Danièle (2005). “Les adverbes évaluatifs dans une approche multidimensionnelle du sens”. In: Choi-Jonin, Injoo; Bras, Myriam; Dagnac, Anne; Rouquier, Magali (eds.). *Questions de classification en linguistique: Méthodes et Descriptions*. Berne: Peter Lang, pp. 19-37.
- Castroviejo, Elena (2006). *Wh-Exclamatives in Catalan*. Universitat de Barcelona, doctoral dissertation.
- Cuenca, Maria Josep (2002). “Els connectors textuais i les interjeccions”. In: Solà, Joan; Lloret, Rosa Maria; Pérez Saldanya, Manuel (eds.). *Gramàtica del català contemporani*. Barcelona: Empúries, pp. 3173-3237.
- Dowty, David (2006). “Diagnostic Tests for Presupposition: A Short Introduction”. Handout. April 10, 2006.
- von Fintel, Kai (2004). “Would You Believe It? The King of France Is Back! Presuppositions and Truth Value Intuitions”. In Bezuidenhout, Anne and Reimer, Marga (eds.). *Descriptions and Beyond*. Oxford: Oxford University Press, pp. 315-41.
- Grimshaw, Jane (1979). “Complement Selection and the Lexicon”. *Linguistic Inquiry* 10: 279-326.
- Groenendijk, Jeroen; Stokhof, Martin (1984). *Studies on the Semantics of Questions and the Pragmatics of Answers*. University of Amsterdam, doctoral dissertation.
- Hamblin, Charles L. (1973). “Questions in Montague English”. *Foundations of Language* 10: 41-53.
- Hara, Yurie (2006a). “Implicatures and Evidentiality of *Because* Complements at Syntax-Semantics-Pragmatics Interfaces.” *Proceedings of Logic and Engineering of Natural Language Semantics*.
- Hara, Yurie (2006b). *Japanese Discourse Items at Interfaces*. University of Delaware, doctoral dissertation.
- Karttunen, Lauri (1977). “Syntax and Semantics of Questions”. *Linguistics and Philosophy* 1: 3-44.
- Kratzer, Angelika (1999). “Beyond Ouch and Oops: How Descriptive and Expressive Meaning Interact”. Handout, Cornell Conference on Theories of Context Dependency. Available at semanticsarchive.net.
- Potts, Christopher (2005). *The Logic of Conventional Implicature*. Oxford: Oxford University Press.
- Rett, Jessica (2006). “Exclamatives are Degree Constructions”. Handout, Rutgers Linguistics Conference (RULing).
- Sancho, Pelegrí (2003). “Anàlisi contrastiva interdialectal de la fraseologia: El cas de déu-n’hi-do, ausa(d)es/a gosa(d)es i espaiet”. *Catalan Review* 17(2): 151-171.
- Scheffler, Tatjana (2005). “Syntax and Semantics of Causal *denn* in German.” *Proceedings of the 15th Amsterdam Colloquium*. Amsterdam, Netherlands, 2005.
- Scheffler, Tatjana (2007). “Levels of Meaning”. University of Pennsylvania, dissertation proposal.

- Tredinnick, Victoria (2004). *Modal Flavor and Quantificational Force in Free Relatives with –ever*. University of Pennsylvania, doctoral dissertation.
- Zanuttini, Raffaella; Portner, Paul (2003). “Exclamative Clauses: At the Syntax-Semantics Interface”. *Language* 79: 39-81.