

# Intensification and secondary content: A case study of Catalan *good*

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## 1 Introduction

Intensifiers, evaluative modifiers, and expressives have often been analyzed as conveying secondary content. More precisely, research on secondary content conveyed by these expressions has been related to the restrictions on the interaction of meanings delivered at different dimensions (e.g. at-issue vs. Conventional Implicature). To name one example, Morzycki (2012) notes that extreme degree adverbs such as *downright* in *downright dangerous* resist embedding under entailment-cancelling contexts (negation, interrogatives, antecedents of a conditional), just like Potts' (2005) *expressive items*, as shown in (1) and (2), respectively.

- (1) a. Murderers aren't (??*downright*) dangerous.  
b. Are murderers (??*downright*) dangerous?  
c. If murderers are (??*downright*) dangerous, you might want to avoid Harold.
- (2) a. ??He isn't fucking calm.  
b. ??Is he fucking calm?

While Morzycki does not develop an analysis that builds on incongruence or contradiction between meanings conveyed at different dimensions, other authors embrace this idea, for instance, in research on evaluative adverbs such as *unfortunately* (Bonami and Godard 2008, Mayol and Castroviejo 2013, Liu 2012, 2014). For example, Liu (2012, 2014) spells out such a proposal to account for the different behavior of the two evaluative German adverbs *leider* and *unglücklicherweise*, both meaning 'unfortunately', when embedded under entailment-cancelling operators, as shown in (3).

- (3) a. Otto ist nicht {\**leider*/\**unglücklicherweise*} krank.  
Otto is not unfortunately sick  
b. Otto ist vielleicht {\**leider*/*unglücklicherweise*} krank.  
Otto is maybe unfortunately sick

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<sup>\*</sup>This research has been partially supported by project FFI2015-66732-P, funded by the Ministry of Economy and Competitiveness (MINECO) and the European Regional Development Fund (FEDER, UE), the IT769-13 Research Group (Basque Government), and UFI11/14 (University of the Basque Country, UPV/EHU). We are indebted to two anonymous reviewers for their insightful remarks. Of course, we are responsible for any remaining mistakes.

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- c. Ist Otto {\*leider/unglücklicherweise} krank?  
 is Otto unfortunately sick

These adverbs are particularly interesting in that they behave differently in these contexts with respect to their acceptability: while *leider* is unacceptable when embedded under all entailment-cancelling contexts, including questions and modals, *unglücklicherweise* is only bad under negation. To account for this difference, Liu argues that *leider* is factive while *unglücklicherweise* is not, (4).

- (4) a.  $[[\textit{leider}]] \rightsquigarrow \lambda p.\textit{unfortunate}(p)$   
 b.  $[[\textit{unglücklicherweise}]] \rightsquigarrow \lambda p. p \rightarrow \textit{unfortunate}(p)$

On this account, both adverbs contribute a Conventional Implicature (CI, i.e. a secondary meaning), but, crucially, only factive evaluative adverbs presuppose the content of the at-issue meaning in affirmative sentences. Specifically, the presupposition of the CI coincides with the at-issue tier in affirmative sentences. Therefore, when the at-issue content is challenged, there is a mismatch between the asserted content (i.e. the proposition without the adverb) and the presupposition of the CI, which yields ill-formedness, (5).

- (5) a. Otto ist leider krank.  
 Otto is unfortunately sick  
 ‘Otto is unfortunately sick.’  
 b. At-issue tier: Otto is sick.  
 c. CI tier: It is unfortunate that Otto is sick.  
 d. CI’s presupposition: Otto is sick.

With non-factive evaluatives, on the other hand, Liu argues that there is merely a semantic clash between the at-issue and the CI content (following Bonami and Godard 2008), illustrated in (6).

- (6) a. \*Otto ist nicht unglücklicherweise krank.  
 Otto is not unfortunately sick  
 b. At-issue tier: Otto is not sick.  
 c. CI tier: If Otto is sick, this is unfortunate.

The semantic clash in (6) has to do with the fact that at the at-issue tier the speaker asserts that Otto is not sick, but at the CI tier she is entertaining the potential consequences of the opposite. However, such a semantic mismatch does not play a role in other entailment-cancelling contexts, for example when embedded under a question, as in (7).

- (7) a. Ist Otto unglücklicherweise krank?  
 is Otto unfortunately sick  
 ‘Is Otto unfortunately sick?’  
 b. At-issue tier: Is Otto sick?  
 c. CI tier: If Otto is sick, this is unfortunate.

If we take the denotation of questions to be the set of its possible answers (Hamblin 1973), this set also includes the proposition ‘Otto is sick’. Therefore entertaining the possibility that Otto is sick at the CI tier is not in conflict with the denotation of the question. A similar reasoning accounts for

the lack of a semantic clash in modal contexts.

The factive vs. non-factive distinction ultimately explains why both adverbs are ill-formed under negation, and that only *unglücklicherweise* is acceptable in conditionals and interrogatives. It furthermore opens up a way of accounting for the PPI behavior of evaluative expressions not in terms of analyzing them as actual PPIs that are anti-licensed (e.g. Ernst 2009), but in terms of a clash between truth-conditional meaning and secondary content. This is a welcome result, given that in other respects they do not behave like other classes of PPIs. More generally, the elements that have been identified as PPIs form a rather heterogeneous group, and therefore it might not be surprising that their PPI behavior can have different sources (e.g. Szabolcsi 2004, Progovic 2005, Hoeksema 2010, Israel 2011, Giannakidou 2011, and references therein).

In Castroviejo and Gehrke (2015), we build on Liu’s proposal to account for the fact that Catalan ad-adjectival *ben* ‘well’, under an evaluative reading illustrated in (8) (not attested in, e.g., Standard English), also resists embedding under negation but not embedding under other entailment-canceling contexts, thus behaving like Liu’s non-factive evaluatives.

- (8) \*En Pere no és ben simpàtic.  
the Peter not is WELL nice  
a. At-issue tier:  $\neg(\mathbf{nice}(\mathbf{p}))$   
b. CI tier: **nice** is well ascribed to Peter.

By proposing this kind of analysis we refute the alternative PPI analysis of Hernanz (1999, 2006), according to which *ben* (as well as its Spanish counterpart *bien*) appears in a Polarity Phrase in the Left Periphery and is therefore incompatible with negation.

In the current paper, we turn to the related Catalan adjective *bon* ‘good’ in order to explore whether an account in terms of a semantic clash between truth-conditional and secondary content can be extended to a possibly related reading it can have, which we will label intensifying *bon* ( $BON_{int}$ ). The motivation for a possible link between the two is the fact that the adjective is also incompatible with negation, as we will see in (11). Some first examples with the adjective *bon* are given in (9).

- (9) a. la importància d’un bon esmorzar  
the importance of a good breakfast  
‘the importance of a good breakfast’  
b. Com fer un bon esmorzar?  
how do a good breakfast  
‘How to prepare a good breakfast?’

Applied to *breakfast* in these examples, *bon* intuitively can mean different things, such as a healthy breakfast, a tasty breakfast, etc.; we subsume these uses under ‘plain evaluative’. The reading we are interested in, however, is one in which the size of the breakfast is commended on and in which we get the impression that the breakfast is abundant, fulfilling its purpose to fill us up.<sup>1</sup> Catalan key examples, in which this reading is most prominent, are given in (10).

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<sup>1</sup>We take size here to also include metaphorical size; we have more to say about what we mean by size in §3, but a deeper reflection on the notion of size is deferred to future research.

- (10) a. una bona dosi  
 a good dose  
 ≈ ‘a big dose’  
 b. un bon ensurt  
 a good shock  
 ≈ ‘a big shock’  
 c. una bona dormida  
 a.FEM good.FEM slept.FEM  
 ≈ ‘a long sleeping period’

In all these examples, *good* does not evaluate the object in question as good but there is an intensifying meaning effect that the objects in question are big in size (or length, as in (10-c)).

Similar to its adverbial counterpart in (8), the intensifying meaning is incompatible with negation, (11); # here signals that the intensifying reading is lost and we only get a plain evaluative reading of *good*.

- (11) (#No) he menjat un bon tros de pa.  
 NEG have.I eaten a good piece of bread  
 ‘I have (#not) eaten a good piece of bread.’

Given this similarity to the use of the related adverb *ben*, which can also not be embedded under negation, a natural idea could be to analyze  $BON_{int}$  in a similar way, namely as conveying both at-issue and secondary meaning, and with negation on the at-issue meaning creating a semantic clash between both types of meaning. Such an account would also be rather natural, given previous accounts of intensifiers and expressives and the observation that cross-linguistically, scalar modifiers can convey both truth-conditional and CI meanings (cf., e.g., Sawada 2010, 2014). However, we will see that such an account suffers from some major shortcomings, and we will propose an alternative account, under which the particular properties of  $bon_{int}$  follow from truth-conditional properties. Nevertheless, we will show that even under this analysis, secondary content still plays a role, in particular when we focus on the role of prosody and gesture.

The paper is structured as follows. §2 addresses the distribution of intensifying *good* ( $BON_{int}$ ), namely that this meaning is lost under negation and under gradation, as well as the characteristics of nominals that are modified by  $BON_{int}$ , which all have in common that they make available a unique dimension, usually of size. In §3.1 we outline one possible way to explain the incompatibility with negation, whereby the additional intensifying meaning of *bon* comes about as secondary content, which gives rise to a semantic mismatch under negation, similar to the proposal for *ben* above. We end up rejecting this proposal in favor of the analysis in §3.2, which treats the relevant meaning ingredients of  $BON_{int}$  as part of the truth-conditional meaning, without, however, assuming that *bon* is a PPI. Thus, we entertain an account in which incompatibility with negation can come about, basically arguing that the PPI behavior is in fact an illusion. Nevertheless, we still leave room for meaning conveyed as secondary content in §3.3, when we address the particular prosody that comes with the intensifying reading of *bon*, in particular in combination with nouns that in principle allow both the evaluative and the intensifying reading of *bon*. Finally, §4 concludes.<sup>2</sup>

<sup>2</sup>Given what we said about the analogy between Catalan BEN ‘well’ and BON ‘good’, one may wonder whether an analysis of BEN along the lines of BON is adequate. As an ad-adjectival modifier, BEN can combine either with a participle or a gradable adjective, in which case the intensifying meaning arises. Whether or not the gradable adjective

## 2 The data

The meaning of *good* has been the object of investigation of both linguistic and philosophical study. Hare (1952) reflects on the semantics of this adjective by pointing out that it does not have a proper denotation, because “there is nothing good things have in common beyond being good”. Good motorcars, good pictures, good meals are all good for different reasons and, as objects, they are quite distinct in terms of their uses, shapes, consistence, concreteness, etc. He follows up saying that there is a commending function of *good*, which Umbach (2015) identifies with its evaluative character. Moreover, Hare suggests that there is a quasi-denotational meaning component in *good* which corresponds to the criteria that speakers appeal to to determine whether an object is good. This is a highly context-dependent component, which relies not only on the specific object (the set of criteria for a car is going to be different from a meal), but also, as Umbach puts it, criteria of goodness are relative to a comparison class, speaker community, time, and so forth, and to a standard for something to be called ‘good’.

In a similar vein, Szabo (2001, 132) discusses the example in (12), stating:

[...] if Sue is a good dancer, then she is good *at dancing*, which is perfectly compatible with her being quite bad *at playing the piano*. So goodness – at least in these cases – does not directly attach to Sue; it attaches to her only through one or another description that is true of her.

- (12) Sue is a good dancer.
- a. There is a way in which Sue is good.
  - b. Sue is good in some respect.

Finally, Asher (2011), who assumes polymorphic types for noun denotations more generally, argues that *good* predicates over the telic argument of a noun, i.e. it relates to the noun’s purpose. He observes that if a given noun does not have an intrinsic purpose, something we find, for instance, with rocks, *good* can “coerce the type of the natural kind into some sort of an artifact, for which one could argue that the telic polymorphic type is well defined” (Asher 2011, 257), as in (13) (ibidem).

- (13) a. This is a good rock for skipping / throwing / carving.  
b. This is a good skipping rock.  
c. This rock is good as a skipping stone.

Keeping these more general observations about *good* (under any of its readings) in mind, namely that it operates on criteria and possibly also functions, and that one can be good with respect to one criterion but not necessarily with respect to others, we now turn to the particular properties that tease apart purely evaluative from intensifying *good*.

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is uni-dimensional does not seem to play a role. Rather, gradability is the relevant factor. We suspect the analysis of  $BON_{int}$  can be extended to  $BEN_{int}$ , and spelling this out is in our research agenda, but we cannot address the issue here for reasons of space.

## 2.1 The distribution of *bon<sub>int</sub>*

Intensifying *good* (*BON<sub>int</sub>*), as we have already seen in (11), does not arise under negation; a further such example is given in (14).

- (14) (#No) he tingut un bon ensurt.  
 NEG have.I had a good shock  
 ‘I have (#not) had a good shock.’

An analysis of *BON<sub>int</sub>* as a PPI (in syntactic and/or semantic terms), however, does not account for the fact that it is acceptable in other entailment-canceling contexts, (15).

- (15) a. Si et prens una bona cullerada de sopa, et posaràs bo.  
 if CL.2SG take.2SG a good spoonful of soup CL.2SG put.FUT.2SG good  
 ‘If you take a good spoonful of soup, you’ll get well.’  
 b. Ja t’has banyat una bona estona?  
 already CL.2SG.have.2SG bathed a good while  
 ‘Have you already bathed for a good while?’

Therefore, an alternative proposal could take inspiration in existing accounts of positive polarity behavior of evaluative modifiers and intensifiers in terms of a clash between at-issue and secondary content, such as those outline in §1. In particular, we could treat *BON<sub>int</sub>* along the lines of *unglücklicherweise* or *ben* and explain its limited distribution by appealing to an incongruence in the interaction of meanings conveyed at different content dimensions. We will entertain such an analysis in §3.1, but will ultimately argue that it is not satisfactory enough. We will then discard it in favor of yet another type of analysis in §3.2, according to which intensification only arises with unidimensional nouns or unidimensionally interpreted nouns, as part of the truth-conditional meaning of the sentence. Under this account, negation leads to the inference of multidimensionality, rendering the intensifying reading unavailable. A benefit of this account is that it ties this property to the following two.

The second property of *BON<sub>int</sub>*, then, is that it is not gradable. That is, under any kind of gradation, the intensifying reading is lost and we, again, only get plain evaluative *bon* (16).

- (16) a. #un molt bon nombre / maldecap / esmorzar  
 a very good number worry breakfast  
 b. #un millor nombre / maldecap / esmorzar  
 a better number worry breakfast  
 c. #un més bon nombre / maldecap / esmorzar  
 a more good number worry breakfast

Finally, *BON<sub>int</sub>* is not the antonym of *mal* ‘bad’, in the sense that there is no counterpart *mal<sub>int</sub>* meaning, say, a small dose, piece, etc. (17).

- (17) a. #una mala dosi  
 a bad dose  
 ≠ ‘a small dose’  
 b. #un mal tros  
 a bad piece

≈ ‘a small piece’

Let us then take a closer look at the nouns that  $BON_{int}$  combines with.

## 2.2 A typology of nouns

Not every noun, when modified by *good*, allows for its intensifying reading. For example, while a unidimensional degree nominalization like *alçada* ‘height’ can combine with  $BON_{int}$  (18-a), a multidimensional one like *salut* ‘health’ cannot (18-b).<sup>3</sup>

- (18) a. una bona alçada  
a good height  
≈ ‘a big/large height’  
b. una bona salut  
a good health  
≈ ‘a big/large health’

More generally, there are three types of nouns to consider. First, there are nouns with which *good* only has a plain evaluative reading, such as those in (19).

- (19) un bon actor, un bon cotxe  
a good actor a good car

As discussed in the beginning of this section, for such nouns we can entertain a set of contextually-determined criteria that will help us determine whether statements containing them are true or false (we are leaving aside here for convenience the subjective nature of *good* and the fact that it gives rise to faultless disagreement). For instance, for *actor* we could take into consideration his/her performance in comedies, in dramas, his/her credibility on stage, his/her voice, etc. For a car, we could consider its speed, its resistance, its safety or its appearance.

Then there are nouns with which *good* gives rise only (or at least highly preferably) to the intensifying reading, (20).

- (20) una bona dosi, un bon maldecap  
a good dose a good worry

The ones that exclusively give rise to  $BON_{int}$  can be divided into further subgroups. A first group comprises measure nouns, which we take to be functional nouns heading partitive structures, (21).

- (21) un bon nombre, una bona quantitat, un bon grapat  
a good number a good quantity a good handful

Second, there are uni-dimensional degree nominalizations, (22).

- (22) una bona alçada, una bona amplada  
a good height a good width

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<sup>3</sup>Building on Sassoon’s (2013) work on multidimensional adjectives, we treat the noun *salut* as multidimensional, because health is sensitive to various dimensions, such as blood pressure, sugar, pulse, etc.

Third, there are negative nominals, (23), for which it is not easy to construe a criterion to positively evaluate the property they denote (unless we can derive a particular function, as suggested for natural terms such as *rock* in Asher 2011, as we briefly discussed in the beginning of this section).

- (23) un bon maldecap, un bon ensurt, un bon cop, un bon problema  
a good worry a good shock a good blow a good problem

Third, evaluative ‘gradable’ nouns, which are always negative as well (cf. Morzycki 2009), also give rise only to the intensifying meaning of *good*, (24).

- (24) un bon idiota  
a good idiot

Finally, both plain evaluative and intensifying readings are available for nouns that are not lexically unidimensional but for which it can still be accommodated that one dimension (i.e. size) is easily accessible, under the view that large sizes are good, like our initial breakfast examples in (9) or those in (25).

- (25) un bon pernil, un bon massatge  
a good ham a good massage

The intensifying reading comes with a particular emphatic prosody (probably with the phonetic and semantic characteristics of focus on *bon*, as will be elaborated on in §3.3), which disambiguates in favor of the intensifying meaning. Without this prosody, we, again, only get the plain evaluative reading of *bon*.

In sum, the intensifying reading of *bon* arises whenever only one dimension is available or the most prominent (usually accompanied with emphatic prosody). The meaning effect of  $BON_{int}$  is that the object is placed sufficiently high on that dimension, which is commonly the size dimension. We now turn to syntactic properties of  $BON_{int}$ .

### 2.3 The syntax of $BON_{int}$

In some Romance languages, including Catalan, attributive adjectives can appear in pre- or post-nominal position, which is often associated with meaning differences. For example, Demonte (1982, 1999) shows for Spanish *buen* ‘good’ that it behaves like an intersective adjective in post-nominal position, in the sense that, e.g., (26-a) refers to a person that is both good and a friend. In prenominal position, on the other hand, it behaves like a subsective adjective: (26-b) refers to someone who is good as a friend.<sup>4</sup>

- (26) a. un amigo bueno  
a friend good  
≈ ‘a kind-hearted friend’  
b. un buen amigo  
a good friend

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<sup>4</sup>As Demonte points out, this duality of interpretations depending on the syntactic position of the adjective only concerns a limited amount of adjectives in Spanish. Other examples include *pobre* ‘poor’ (miserable vs. impoverished) or *nuevo* ‘new’ (recent vs. barely used).

≈ ‘a great friend’

We find the same difference with Catalan *bon* and an additional difference in form (*bo* for the intersective, post-nominal *good*, and *bon* for the subjective pre-nominal one), (27).

- (27) a. un amic bo  
a friend good  
≈ ‘a kind-hearted friend’  
b. un bon amic  
a good friend  
≈ ‘a great friend’

Note that both examples in (27) are instances of what we have called evaluative *bon*, so whatever we have labeled as such is a more heterogeneous group of readings (just because we are not interested in these kinds of readings at the moment).

Turning to  $BON_{int}$ , on the other hand, all our previous examples show that it obligatorily appears in pre-nominal position, and thus it can never be used intersectively. For example, changing the order with nouns that give rise exclusively to  $BON_{int}$  leads to ungrammaticality, as shown in (28-a) (for the masculine) and (28-b) (for the feminine).<sup>5</sup>

- (28) a. \*un nombre/grapat/maldecap/ensurt/cop/idiota bo  
a number/handful/headache/shock/idiot good  
b. \*una quantitat/alçada/amplada bona  
a quantity/height/width good.FEM

In addition,  $BON_{int}$  cannot appear in predicative position, in the sense that in this position we only get the plain evaluative reading of *good*, (29).

- (29) #L’ esmorzar és bo.  
the breakfast is good

This leads to the conclusion that  $BON_{int}$  is exclusively a predicate modifier, unlike plain evaluative *bon*. This will be an important part of the analysis, to which we turn now.

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<sup>5</sup>Interestingly, some of these examples, especially measure Ns followed by *bo/bona* are improved if the adjective is in turn modified by *ben* ‘well’, (i).

- (i) una quantitat ben bona  
a quantity well good  
‘a good quantity’

The same happens with nouns that are specified with numerals, (ii), a context in which English/German *good/gut* can readily appear as intensifiers (e.g. *a good three meters into the woods*).

- (ii) El sopar ha durat tres hores ben bones.  
the dinner has lasted three hours well good  
‘The dinner lasted three good hours.’

We leave the study of this phenomenon for further research.

### 3 The analysis

An adequate analysis of  $\text{BON}_{int}$  has to capture its behavior as a subjective predicate modifier, its incompatibility with negation and gradation, its requirement for unidimensional nominals, as well as its marked prosody. In the following, we outline two possible options for an analysis. Under the first account, discussed in §3.1, we assume two different lexical entries for plain evaluative and intensifying *good*, under which intensification is treated as non-at-issue meaning which yields a contradiction under negation. Even though this account might be considered fairly obvious given previous observations and proposals in the literature, we will see that it faces some serious drawbacks and we will discard it in favor of a second type of account, outlined in §3.2, which works with one lexical entry for all instances of *good*. Under this account, incompatibility under negation arises because negation leads to the inference of multidimensionality, which then effectively eliminates unidimensionality required for the intensifying reading to arise. Finally, in §3.3, we propose to analyze the emphatic prosody in terms of secondary content, given that it is performative and speaker-oriented.

#### 3.1 A first try: Subjective ‘good’ + an ordering

Given that  $\text{BON}_{int}$  behaves like a subjective adjective, we start out from the semantics for  $\text{BON}_{int}$  in (30), which builds on denotations commonly assumed for prototypical subjective adjectives.<sup>6</sup>

$$(30) \quad \llbracket \text{BON}_{int} \rrbracket = \lambda P_{\langle e,t \rangle} \lambda x_e. (\mathbf{good-as}(P))(x) \quad (\text{to be revised})$$

This denotation alone does not yet yield intensification, as it does not explain the difference in (31), or the ambiguity of (32). In fact, (30) could be the denotation for the plain evaluative *bon*.

- (31) a. un bon amic  
           a good friend  
       b. un bon ensurt  
           a good shock

- (32) un bon esmorzar  
       a good breakfast

Nevertheless, what (30) buys us is the notion that  $\text{BON}_{int}$  selects those instances in the domain of the extension of the noun that count as good. Someone is good as a friend and something counts as good as a shock. In this respect, our final analysis does not differ from our first attempt outlined in the previous section.<sup>7</sup> To capture the intensifying meaning and the observation that  $\text{BON}_{int}$  arises with nouns that make available one dimension, we could hardwire this into the semantics of  $\text{BON}_{int}$  and effectively arrive at a semantics of the sort in (33).

$$(33) \quad \text{a.} \quad \llbracket \text{BON}_{int} \rrbracket = \lambda P_{\langle e,t \rangle} \lambda x_e : \forall y, z \in P [y \geq z \vee z \geq y]. (\mathbf{good-as}(P))(x)$$

<sup>6</sup>For example, Morzycki (2015) provides the (intensional) semantics in (i).

(i)  $\llbracket \text{skillful} \rrbracket = \lambda P_{\langle e,t \rangle} \lambda x_e \lambda w_s. \mathbf{skillful-as}(P)(x)(w)$

<sup>7</sup>We will go back to what the latter amounts to in §3.1.1.

- b.  $\forall y[P(y) \wedge P(x) \wedge y \geq x \rightarrow (\mathbf{good-as}(P))(y)]$

Under this semantics,  $BON_{int}$  selects nominals whose extension is ordered and asserts that  $x$  is among the good instances of  $P$ , (33-a). Furthermore, this account includes a monotonicity inference in (33-b) that ensures that any higher values are also good. This is inspired by Nouwen’s (2005, 2011) work on evaluative adverbs such as *surprisingly* and *unusually*. He observes that, while (uni-dimensional) gradable adjectives license downward-directed inferences (they are upward monotone), (34-a), such ad-adjectival adverbs reverse the gradable adjective’s entailments in licensing upward-directed inferences (they behave as downward-monotone operators), (34-b).

(34) Let  $P$  be some operator on propositions.

- a.  $P$  is  $MON\uparrow$  iff  $p \rightarrow p' \Rightarrow P(p) \rightarrow P(p')$   
 b.  $P$  is  $MON\downarrow$  iff  $p \rightarrow p' \Rightarrow P(p') \rightarrow P(p)$   
 (Nouwen 2005, 3)

With an example, if John is 180cm tall, he is also 179cm tall and 165cm tall (and so on for any lower degree of height). Now, if we assert that John is surprisingly tall because he is 180cm tall, we cannot be sure to truthfully assert the same were he shorter. By contrast, for any higher degree, it follows that we can truthfully assert that John’s height would be surprising. We could propose that  $BON_{int}$  can license upward-directed inferences in the same vein.

Positing a distinct lexical entry for  $BON_{int}$  directly captures that it is not the antonym of *mal* ‘bad’, which is merely the opposite of plain evaluative *bon*. Furthermore, under this account, the intensifying effects are only predicted to arise when the nominal’s extension is ordered. This naturally happens when its sole criterion of evaluation is size. Any unidimensional nouns are therefore predicted to be compatible with  $BON_{int}$ , such as *dosi* ‘dose’, *nombre* ‘number’, or *amplada* ‘width’, but also negative nominals that naturally come in different sizes, e.g. *problema* ‘problem’. The monotonicity entailment triggers upward-directed inference, in the sense that all higher values (higher sizes of a problem) are also good. Therefore, a good problem size has to be a considerable size. Multidimensional nouns, on the other hand, such as (35), only give rise to the plain evaluative meaning of *good*.

- (35) un bon amic  
 a good friend

Finally, nominals like *breakfast*, (36), which are not as such unidimensional, can still give rise to both readings, and the intensifying reading arises because with breakfasts size (and related to it the function to satisfy someone’s hunger) is naturally accessible.

- (36) un bon esmorzar  
 a good breakfast  
 a.  $\sim$  a healthy breakfast (merely evaluative  $BON$ , no intensification)  
 b.  $\sim$  an abundant breakfast ( $BON_{int}$ )

Such an ambiguity of subjective  $BON$ , then, arises with a number of nominals, whenever, in addition to a pure evaluation, uni-dimensionality and ordering are easy to access (e.g. for breakfasts: abundance), and emphatic prosody helps along the way; we come back to this point in §3.3. It does not arise with, e.g., ‘good friend’ because this would entail that there are prominent contexts

in which a friend is only good if large/big.

### 3.1.1 Accounting for the PPI behavior

The ill-formedness under negation under such an account would be captured by treating intensification as secondary meaning that is not at issue. Such an account would be along the lines of proposals by Bonami and Godard (2008), Mayol and Castroviejo (2013), Liu (2014), and Castroviejo and Gehrke (2015) (see also Sawada, this volume), which were mentioned in §1, where positive polarity is explained as a clash between meanings conveyed at different tiers. In particular, under such an account, we would argue that the monotonicity inference in (35-b), which ensures intensification, is presented as a non-at-issue content, say, as a CI (Potts 2005, Tonhauser et al. 2013, a.o.). Non-at-issue content cannot be interpreted under the scope of operators, and negation only accesses the at-issue content. Thus, negating the at-issue content makes the non-at-issue meaning yield a contradiction, because in one dimension of meaning (the assertion tier) we are conveying that goodness does not hold, and in the other dimension (the CI tier) we are saying that any object that equals or is higher on the ordering counts as good, (37).

- (37) a.  $\lambda P \lambda x. \neg[(\mathbf{good-as}(P))(x)]$   
 b.  $\therefore \forall y [P(y) \wedge y \geq x \rightarrow (\mathbf{good-as}(P))(y)]$

Note that  $x \geq x$ , so we would be saying that  $x$  is good and not good at the same time, hence the contradiction. Let us illustrate this with an actual example, (38).

- (38) (#No) he tingut un bon ensurt.  
 neg have.I had a good shock  
 Intended: ‘I did not have a big shock.’

In (38) it is asserted that there does not exist an entity that I had that is good as a shock, (39-a). However, the monotonicity inference in (39-b) states that for all  $y$  that are shocks and  $y$  is greater/equal  $x$  it holds for  $y$  that  $y$  is good as a shock.

- (39) a.  $\neg \exists x [(\mathbf{good-as}(\mathbf{shock}))(x) \wedge \mathbf{had}(\mathbf{I}, x)]$   
 b.  $\forall y [\mathbf{shock}(y) \wedge \mathbf{shock}(x) \wedge y \geq x \rightarrow (\mathbf{good-as}(\mathbf{shock}))(y)]$

This leads to a clash between the asserted meaning in (39-a), which states that there is no ‘good shock’, and the secondary meaning conveyed by the monotonicity inference in (39-b), which states that any shock greater/equal than that shock is good as a shock. Therefore  $\text{BON}_{int}$  cannot be embedded under negation.

### 3.1.2 Shortcomings of this first attempt

There are several shortcomings of this account. A first problem is that we need to posit two different lexical items for plain evaluative and  $\text{BON}_{int}$ . One could argue that this might not be such a big problem given that we find similar splits into two distinct lexical items with other elements, where one conveys the ‘original’ truth-conditional meaning and the other some secondary or different meaning, possibly acquired over time, for example with certain particles in German that can be focus or discourse particles, such as *nur* ‘only’ (under the first meaning). However, we still have the

intuition that the case of *bon* is rather different and that the two uses are more closely connected.

A more pressing issue is that this account does not explain the link between PPI-hood and non-at-issueness in any principled way. We just hard-wire some lexical conditions into the semantics of  $BON_{int}$  that ensure contradiction under negation and yield the desired semantic outcome. But to do so, we have to assume a controversial idea, namely that variables that are bound at one tier can bind variables that remain unbound in the other tier, i.e. in (37), for instance,  $P$  and  $x$  on the CI tier have to be bound by the lambda operators on the at-issue tier. Without this trick, we cannot obtain a contradiction. For instance, if we add variables  $P$  and  $x$  at the monotonicity condition in (37-b), there is no contradiction, as illustrated in (40).

- (40) a.  $\neg\exists x[(\mathbf{good-as}(\mathbf{shock}))(x) \wedge \mathbf{had}(\mathbf{I},x)]$   
 b.  $\forall P,x,y[P(y) \wedge (P)(x) \wedge y \geq x \rightarrow (\mathbf{good-as}(P))(y)]$

(40) conveys, at the at-issue tier, that there is no good shock, and it further adds, through the CI tier, that for any property and two individuals, if they are partially ordered and the smaller one has this property, the bigger one also has to have it. But nothing forces a connection between the two tiers. Under this view, there are no variables bound at different tiers and the contradiction does not obtain. Therefore, to ensure that we want the desired contradiction under negation, we have to leave the relevant variables unbound at the CI tier.

Note also that the resistance to embed under negation is here not related to the absence of  $MAL_{int}$  and the impossibility to grade  $BON_{int}$ , so we need independent explanations for these facts. For instance, we may have to claim that  $BON_{int}$  is not gradable, unlike plain evaluative *good*. For the absence of  $MAL_{int}$ , on the other hand, we could merely stipulate that there is no such lexical item and leave it at that. However, we will see in §3.2 that both properties are directly related to the impossibility of  $BON_{int}$  to be embedded under negation.

What is even more important is that the monotonicity inference does not behave like a prototypical CI or expressive item. Although he does not discuss this directly, Nouwen (2005, 2011) in fact assumes that this monotonicity inference is an entailment (and hence, part of the at-issue meaning). Additionally, aside from the potential explanation in terms of a clash between tiers, other properties of CIs or expressive items (as stated in e.g. Potts 2005, 2007) are also not found with  $BON_{int}$ . The secondary content of CIs and expressive items is commonly anchored to the speaker and/or to the utterance time. However, the monotonicity inference arises quite generally, independently of speaker and utterance time. Of course, subjective evaluative adjectives like *good* involve anchoring the evaluation to a speaker (or a judge) more generally (something we implicitly assume here but did not add to the formalization, to focus on the actual issues of interest), but this is independent of the monotonicity inference, and it also arises with plain evaluative *bon*.

Thus, the empirical generalization that is not captured by this account is the one in (41).

- (41) Whenever the N's extension is ordered (on a uni-dimensional scale),  $BON_{int}$  obtains, along with the PPI behavior.

Hence, we discard this kind of analysis and propose an alternative account that directly captures this generalization and at the same time provides an explanation for all the properties of  $BON_{int}$ .

## 3.2 A more promising analysis: One lexical entry + unidimensionality

The intuitive idea behind the analysis we propose goes as follows:  $BON_{int}$  is not a lexical entry different from  $BON$ . Rather it is a reading that arises under particular conditions, namely when (i) it holds that the bigger the size of the objects in the extension of  $N$ , the better the property ascription of  $N$  to the objects, or when (ii) we can accommodate that this is the case (by behaving as though the other dimensions are not relevant). Crucially, these conditions are met only if the extension of  $N$  is ordered along a uni-dimensional scale. The second pillar of this analysis is the claim that the PPI behavior is merely an illusion. The semantic composition of negation and *bon* yields the inference that there exist other dimensions for which it is possible that the object is good. This entails that it is not uni-dimensional and, thus,  $BON_{int}$  does not obtain, but instead we get plain evaluative *good*. We will argue that the other distributional properties of  $BON_{int}$  can also be related to the difference between uni- and multidimensionality.

### 3.2.1 How does intensification come about?

We propose that intensification comes about in two steps. First, there is a restriction on the modified noun (the  $P$  variable below). If it holds,  $BON_{int}$  may arise. If it does not, plain *good* obtains. This restriction can be spelled out as in (42).

$$(42) \quad \forall x, y \in P[x \geq y \rightarrow (\mathbf{good-as}(P))(x) \geq (\mathbf{good-as}(P))(y)]$$

In prose, this says that it has to hold for this noun that for all two objects in its extension, if one is higher than the other on the unique dimension (i.e. bigger in size), then the bigger one is better as an  $N$  than the smaller one.<sup>8</sup>

This condition selects only those nouns whose ordered domain is inherent and not contingent on a particular context. This condition furthermore excludes those nouns that can be evaluated according to more than one dimension.

The second step is the monotonicity entailment that is triggered by the semantics of *good* more generally. That is, when *good* combines with the kind of noun as specified in (42), it licenses upward-directed inferences, as shown in (43).

$$(43) \quad \forall P, x, y[(\mathbf{good-as}(P))(x) \wedge P(y) \wedge y \geq x \rightarrow (\mathbf{good-as}(P))(y)]$$

In words, for any noun and for any two objects in its extension, if the lower one on the scale is good as an  $N$ , the one that is on the same place on the scale or higher also counts as good as an

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<sup>8</sup>As the careful reader must have realized, to make this constraint work, we have to assume that **good-as** is a measure function rather than a predicate of individuals, as we had been assuming for convenience until now. To avoid complications, we have ignored that *good* should be treated as a lower-bound adjective, like *bent* (Kennedy and McNally 2005, McNabb 2012) with the semantics in (i).

$$(i) \quad \llbracket \mathbf{good} \rrbracket = \lambda P \lambda x. \exists d [d > \mathbf{min}(S_{good}) \wedge (\mathbf{good-as}(P))(x) = d]$$

In other words, subsective *good*, when occurring without further modification, refers to a minimal degree that has to be met for the predicate to be truthfully applied, and **good-as** is a measure function from noun denotations and individuals to degrees. However, when *good* is modified by a degree expression, such as the comparative morpheme, it is relativized, so that the standard degree is now contextually determined. On the lower-bound nature of *good* and the consequences of gradation, see subsection 3.2.2.

N. Note that, under this analysis – unlike in analysis 1 – monotonicity is not a secondary meaning (i.e. a CI) of the lexical item  $BON_{int}$ . Instead, it is a general effect of *good* when the noun has the properties described in (42).

Let us now go through example by example and evaluate how this approach explains the empirical generalizations we arrived at in §2. We start with the measure noun *dose* in the example (44).

- (44) una bona dosi d'insulina  
a good dose of insulin

How do we determine whether a specific dose is good as such? As a rule, we appeal to criteria, because this is part of the “quasi-denotational” meaning of *good*, as we discussed in the beginning of §2. By definition, all the objects in the denotation of the noun are proper instances of doses. The only criterion in which the objects in the extension of the noun differ is size (amount of insulin within the limits of what a dose stands for). Now, monotonicity comes into play and licenses upward-directed inferences. That is, bigger sizes are also good (not necessarily smaller sizes). Thus, the dose of insulin must be high enough on the scale to count as good.

Let us then turn to examples involving negative nouns, such as *ensurt* ‘shock’, repeated in (45).

- (45) un bon ensurt  
a good shock

As we did for *dosi* ‘dose’, we should ask ourselves what criteria there are to determine whether the objects in  $[[ensurt]]$  are good or bad. In the absence of other easily accessible criteria, given that negative nouns are usually not considered to be good, size seems to be the only available option (there are smaller and bigger shocks). So, it makes sense to conceptualize the extension of *ensurt* as an ordered set of objects, and to even consider that bigger shocks are good instances of shocks. The monotonicity of *good* licenses upward-directed inferences and, hence, *good* has an effect similar to that of *big*.

Now we turn to ambiguous cases, like *esmorzar* ‘breakfast’, exemplified in (46).

- (46) un bon esmorzar  
a good breakfast

When we consider criteria to determine whether a breakfast is good, we can come up with several of them, for instance taste, variety of ingredients, healthiness, size, etc. Therefore, it is not true that there is a single criterion for goodness in a breakfast and, thus, there is no unique dimension in which the objects in  $[[esmorzar]]$  are ordered. This is why one possible meaning is plain evaluative *good*. Why is it also possible to obtain  $BON_{int}$ ? Our answer is that a speaker can, in a way, pretend that there is only one relevant dimension, namely size, so the restriction in (42) holds. Put differently: if it can be accommodated that the bigger the size of N, the better, then it is possible to pretend that there is only one relevant dimension. This idea is usually conveyed through a special prosody and even gesture,<sup>9</sup> and it amounts to dismissing any uninteresting dimensions to underscore that the more quantity, the better. Once *esmorzar* ‘breakfast’ has turned into a uni-dimensional noun, the monotonicity of *good* gives rise to upward-directed inferences and, with

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<sup>9</sup>See §3.3 for a more detailed explanation of how this unfolds.

them, the sense of intensification.

To conclude this review of cases, we mention two examples in (47) where intensification does not obtain.

- (47) a. #una bona flor  
a good flower  
b. #un bon cercle  
a good circle

In principle, nothing should prevent us from assuming that the extension of *flor* ‘flower’ or *cercle* ‘circle’ is ordered. We can perfectly conceive of the idea that flowers come in different sizes, and so do circles. The key difference between these examples and examples like *dosi* ‘dose’ and *ensurt* ‘shock’ is that the constraint in (42) is not satisfied. That is, it does not make sense to assume that the bigger the flower/the circle, the better it is. Size is not a defining dimension for such nouns. The lack of intensification interpretation in (47) is the main reason why (42) is stated as a constraint on the nouns that can yield a  $BON_{int}$  reading.

How do we determine if a flower is good or bad? This is also a fair question, because maybe (47) could be ruled out for independent reasons. For instance, there may be no criteria to establish when a flower or a circle are good or bad. This is an expected behavior in natural kind nouns, as noted by Asher (2011) (see also the beginning of §2). As in the stone case, if we make available a function for the nouns by means of an explicit phrase, the expression becomes meaningful, as shown in (48).

- (48) una bona flor per regalar  
a good flower for give  
‘a good flower to give as a present’

Nevertheless, size still does not play a role in this case, so we still get only the plain evaluative reading of *bon*.

After having developed our idea of how intensification is triggered, we need to explain the additional restrictions that differentiate plain evaluative *good* from  $BON_{int}$ , namely its PPI behavior. We will see in the following that this alleged PPI behavior is an illusion, and that this behavior can receive the same explanation as the absence of an antonym and non-gradability of  $BON_{int}$ .

### 3.2.2 Accounting for the PPI behavior

The main assumption we are making here is that the ill-formedness of the following two sentences has the same origin.

- (49) a. Aquest (#no) és un bon problema.  
this NEG is a good problem  
Intended: ‘This is (#not) a big problem.’  
b. #Aquest és un mal problema.  
this is a bad problem

In other words, the reason why we cannot negate *bon problema* ‘good problem’ is the same reason why we cannot felicitously utter *mal problema* ‘bad problem’ (with this kind of noun) or that we

do not have a  $MAL_{int}$  (more generally). To anticipate our main claim, we will propose that this behavior has to do with the fact that negation + *good*, as well as *bad*, give rise to the idea of more than one dimension in N. As previously argued, entertaining more than one dimension for the N is at odds with the occurrence of the  $BON_{int}$  reading. Consequently, this is an analysis where PPI-hood is really an illusion and has nothing to do with a clash between meanings conveyed at different content tiers.

To provide some background, Analysis 2 builds on Sassoon’s (2013) account of multidimensional As, such as *healthy*, *sick*, for which one has to consider multiple independent dimensions in order to assess whether an entity has the property in question. In contrast, unidimensional adjectives like *long*, *big*, *short* are lexically specified for one particular dimension (length, size etc.). Within the multidimensional adjectives, Sassoon distinguishes between conjunctive ones, e.g. *healthy* in (50-a), and disjunctive ones, e.g. *sick* in (50-b).

- (50) a.  $\lambda x. \forall Q \in \text{DIM}(\textit{healthy}) : Q(x)$   
 b.  $\lambda x. \exists Q \in \text{DIM}(\textit{sick}) : Q(x)$

This analysis captures the fact that in order to evaluate whether ‘healthy’, a conjunctive multidimensional adjective, is truthfully predicated of a given entity, this entity has to be healthy in all relevant dimensions, where  $Q$  in (50) ranges over dimensions and DIM is the dimension assignment function. Quantification over dimensions comes with the usual contextual domain restriction to relevant respects, i.e. dimensions, which is a property of universal quantification more generally. With disjunctive multidimensional adjectives like *sick* in (50-b), it is enough to find one dimension with respect to which an entity is sick in order to truthfully assert that someone is sick. Crucially, when negated, conjunctive adjectives become disjunctive, and vice versa, due to the logical properties of existential and universal quantification under negation.

Sassoon (2013) investigates a number of different multidimensional antonyms and diagnoses them as conjunctive or disjunctive, based, among others, on their co-occurrence with *except*-phrases in corpora, which readily appear with conjunctive but not with disjunctive adjectives (e.g. *healthy* /#*sick except for the ears*). She establishes as a good predictor for the conjunctive vs. disjunctive status of a given adjective whether the adjective is positive vs. negative. Her list of adjectives also contains *good* and *bad*, which according to her diagnostics turn out to be (borderline) conjunctive and disjunctive, respectively. Let us see how this helps us account for the apparent PPI behavior of  $BON_{int}$ .

We adapt Sassoon’s theory to our idea of subsecutive *good* (note that the denotations in (50) are for intersective adjectives, viewed as one-place predicates). Moreover, we identify Sassoon’s (2013) *dimensions* with Umbach’s (2015) *criteria*, briefly discussed in the beginning of §2. The result is given in (51).

- (51)  $\lambda P \lambda x. \forall Q \in \text{DIM}(\mathbf{good-as}(P)) : Q(x)$

In (51) we show that subsecutive *good* takes into consideration several dimensions (criteria). More specifically, since it is a conjunctive adjective, for some object to be considered a good object, it must be the case that all the dimensions that are under consideration count as good. Let us illustrate this idea with the example in (52).

- (52)  $[[\textit{good table}]] : \lambda x. \forall Q \in \text{DIM}(\mathbf{good-as}(\mathbf{table})) : Q(x)$

- a. materials
- b. robustness
- c. looks, ...

Imagine the relevant dimensions to consider when we evaluate a table as good are materials, robustness and looks. We cannot deem a table a good table if the materials are fine and so are the looks, but it is not robust (so it will break at any moment).

As shown in the previous subsection,  $BON_{int}$  only comes about if the N's extension is ordered (remember that this is a necessary, but not a sufficient condition). Moreover, if there is a single (or contextually prominent) dimension along which the elements in the domain of N are ordered, the intensification meaning can arise as well. We claim that this is only possible for *good* because when it applies to unidimensional nouns, all relevant dimensions collapse into one, or, rather, there is only one dimension, which is clearly established because we searched for other relevant dimensions and could not find any.

By contrast, the semantics of disjunctive multidimensional adjectives, including *bad*, merely requires there to exist one dimension in which the entity has the property in question, other possible dimensions are not relevant to assess truth/falsity of a given statement. We propose that the possibility of additional dimensions comes about as the result of a quantity implicature, as sketched in (53).

- (53) a.  $\exists DIM \rightsquigarrow \neg \forall DIM$   
 b.  $\neg \forall DIM \rightsquigarrow \exists DIM' \neq DIM$

First, the existence of one dimension of badness gives rise to the scalar implicature that not all dimensions are bad. We are assuming here the regular quantity implicature associated with the use of the indefinite quantifier (i.e. *some* conversationally implicates *not all*). Second, if not all dimensions are bad, we can reason that there are alternative dimensions (which may be good or bad). In other words, *not all* conversationally implicates *some*. Therefore, we quickly entertain the idea of more than one dimension and, with this, the possibility of  $BON_{int}$  vanishes.<sup>10</sup>

Crucially now, as established in Sassoon (2013), conjunctive multidimensional adjectives under negation behave like disjunctive ones. Therefore, *good* under negation turns into a disjunctive adjective, which gives rise to the inference that more than one dimension could exist. This, in turn, causes the loss of a unique dimension necessary for the intensifying reading to arise and thus we only get the plain evaluative reading (where available). In sum, more than one dimension leads to plain evaluative *good*, and conjunctive *good* under negation behaves like a disjunctive adjective (so, for this matter, *not good*  $\approx$  *bad*).

A further consequence of this analysis is that there is no antonym  $MAL_{int}$ , as we saw in (17), given that *bad* is a disjunctive multidimensional adjective that precludes unidimensionality. Since *mal* 'bad' behaves like a disjunctive adjective, one may be led to think that the negation of *mal* should behave in turn as a conjunctive adjective and, thus, give rise to an intensification effect

<sup>10</sup>An anonymous reviewer points out that it is not clear why the possibility of multiple dimensions does not arise in the case of *good*, which involves universal quantification over dimensions. Admittedly, universal quantification may give rise to the inference (for some, a presupposition) that there is more than one dimension. Although we leave this issue open, there is one difference between *good* and *bad* that may play a role in this puzzle. In the case of *good*, e.g. *good dose*, it holds that *x* is good in all its dimensions, and we do not remain uncertain as to whether some of its potential dimensions are good or bad, as in the case of the ill-formed *bad dose*.

provided that the restrictions on the noun are satisfied. Interestingly, this is not the case, as shown by the ill-formedness of (54).

- (54) #Aquest no és un mal problema.  
this NEG is a bad problem  
**intended:** ‘This isn’t a big problem.’

Our tentative answer to this is that ‘not bad’ yields *litotes* (Bolinger 1972), which has an equivalent meaning to ‘pretty good’, not just plain ungraded *good*. As will be argued for in what follows, gradability of *good* involves dimension counting and, hence, entertaining more than one dimension, which prevents  $BON_{int}$  from arising.

Finally, does it follow from Analysis 2 that  $BON_{int}$  cannot be graded, as was shown in (16)? Our hunch is that grading *good* also involves evoking more than one dimension. If the modified nominal does not have more than one dimension to begin with, grading yields ill-formedness, as in (55-a). To the extent that this involves considering that doses can be evaluated according to more than one dimension, then the sentence can be interpreted. Otherwise, the result is odd, as indicated here with ‘#’. If, on the other hand, the modified nominal makes available more than one dimension, as in (55-b), grading yields plain evaluative BON.

- (55) a. #molt bona dosi  
very good dose  
↪ infelicitous in any interpretation  
b. molt bon esmorzar  
very good breakfast  
↪ plain evaluative interpretation only

Certainly, we do not mean to claim that degree modification gives rise to multi-dimensionality, as this would not follow from the well-known semantics for e.g. *very*. We can think of two consequences of grading *bon*. First, it requires turning a lower-bound adjective such as *good*, which has a context-independent standard (cf. Kennedy and McNally 2005, McNabb 2012), into a relative adjective, which has a contextually-determined standard. That is, for some  $x$  to be good, it has to have a non-zero degree of goodness (on this, see also Asher 2011), which explains why *not good* entails *bad* (see Rotstein and Winter 2004, on the entailment patterns of *partial predicates*). However, when modified by a degree expression that refers to a contextually-determined standard, such as *very*, *good* behaves like a relative – open-scale – adjective. Second, it triggers a comparison with a contextual value, and this value is calculated on the basis of dimension counting. In an example such as (55-a), the comparison between the goodness of that particular dose and the standard for goodness in doses is based on counting the number of dimensions, such that the former cardinality has to exceed the latter. Essentially, we are assuming that *very good* is equivalent to *good in many respects*.<sup>11</sup> This naturally gives rise to the inference that there is more than one dimension.

This core idea builds on Sassoon (2015), who argues that comparison with multidimensional adjectives involves comparing dimension cardinalities. Let us illustrate this with an example, (56), where *optimistic* is taken to be a multidimensional adjective. As Sassoon puts it, imagine that Ann is optimistic with respect to love, family, work and friends; by contrast, Bill is optimistic with respect to all these dimensions, but also regarding economy, pollution, peace and weather. In this

<sup>11</sup>We adopt this phrasing from an anonymous reviewer.

scenario, (56-a) would be false.

- (56) Sassoon (2015, 18)
- a. Ann is more optimistic than Bill.
  - b.  $\text{More}(\lambda d. \text{Ann is } d\text{-optimistic}, \lambda d. \text{Bill is } d\text{-optimistic})$ .
  - c.  $[\lambda D \lambda D'. \text{MAX}(D') > \text{MAX}(D)](\lambda n. |\lambda R \in \text{DIM}_{\text{optimistic}}. \forall d \in I_R, \text{R}(d, \text{bill})| \geq n)$   
 $(\lambda n. |\lambda R \in \text{DIM}_{\text{optimistic}}. \forall d \in I_R, \text{R}(d, \text{ann})| \geq n)$
  - d.  $\text{MAX}(\lambda n. |\lambda R \in \text{DIM}_{\text{optimistic}}. \forall d \in I_R, \text{R}(d, \text{ann})| \geq n) >$   
 $\text{MAX}(\lambda n. |\lambda R \in \text{DIM}_{\text{optimistic}}. \forall d \in I_R, \text{R}(d, \text{bill})| \geq n)$ .
  - e. False because  $|\{\text{R}_{\text{love}}, \text{R}_{\text{family}}, \text{R}_{\text{work}}, \text{R}_{\text{friends}}\}| < |\{\text{R}_{\text{love}}, \text{R}_{\text{family}}, \text{R}_{\text{work}}, \text{R}_{\text{friends}}, \text{R}_{\text{economy}}, \text{R}_{\text{pollution}}, \text{R}_{\text{peace}}, \text{R}_{\text{weather}}\}|$ .

In Sassoon’s account, the degree predicate  $\lambda d. A(\text{Ann}, d)$  denotes the set of degrees  $d$  such that Ann is  $A$  to degree  $d$ .  $I$  is a standard interval.  $R_A$  is a dimension-counting relation from entities to the number of dimensions ( $\text{Dim}_A$ ) whose norm they exceed. *More* is here viewed as a  $>$  relation between degree properties, as shown in (56-b). The conditions imposed in (56-c) and (56-d) read as follows: The maximal number of dimensions in which Ann is optimistic exceeds the maximal number of dimensions in which Bill is optimistic.

In this same line of thought, *molt bo* or *very good* also involves counting dimensions. If *molt* ‘very’ were to be analyzed under this lens, it would impose the condition that the individual’s (i.e. the dose’s) maximal amount of dimensions is much higher than a contextual standard. In other words, the dose has many dimensions of goodness. This can be modeled as in (57).

- (57)  $\lambda n. |\lambda R \in \text{DIM}_{\text{good-as-dose}}. \forall d \in I_R, \text{R}(d, \text{this})| \geq n$  is a large interval.<sup>12</sup>

Note that, under this analysis, if the number of dimensions of the dose has to exceed a large number, it has to exceed 1. Therefore, we have to evoke more than one dimension and, thus, plain evaluative *good* arises.

In sum, Analysis 2 captures the empirical generalizations we arrived at in §2 as follows. First, under both plain evaluative and intensifying readings, *bon* is a subjective adjective, but only under the latter it is exclusively a predicate modifier, given the way we have adapted Sassoon’s (2013) multidimensionality into the denotation of *bon*. The restricted distribution of  $\text{BON}_{\text{int}}$ , i.e. its incompatibility with negation and gradation, as well as the absence of  $\text{MAL}_{\text{int}}$ , were directly tied to the need for uni-dimensionality, which was hardwired into the truth-conditional semantics, including a monotonicity inference. Thus, we have opened up a third way of capturing apparent PPI behavior, which then has nothing to do with PPIs as such anymore, whether they are grammatically anti-

<sup>12</sup>We informally adapt Solt’s (2008) denotation for *many* as in (i), which states that the ‘neutral range’ on the particular scale  $N_{\#}$  is included in the interval in question.

- (i)  $[[\text{many}]] = \lambda I_{\#}. I \text{ is ‘large’}$   
 $= \lambda I_{\#}. N_{\#} \subset I$

A more formal way of representing (57), more in line with Solt’s analysis, would be (ii):

- (ii)  $N_{\#} \subset \{n : |\lambda R \in \text{DIM}_{\text{good-as-dose}}. \forall d \in I_R, \text{R}(d, \text{this})| \geq n\}$

licensed or whether their PPI behavior is due to a clash between truth-conditional and secondary content.

Analysis 2, then, unlike Analysis 1, relegates the meaning we have identified for intensifying *bon* to its truth conditions, and we therefore have to ask the question whether any interesting secondary content is left in this use of *bon* (so ultimately: what does this paper have to do with the other papers in this volume). In the following section, we will see that there is still room for secondary content also under Analysis 2.

### 3.3 Emphatic prosody

As in Analysis 1, for the ambiguous cases, emphatic prosody is the cue for  $BON_{int}$  to arise. Let us see a minimal pair, where (58-a) has the plain evaluative interpretation, and (58-b) has the  $BON_{int}$  reading.

- (58) a. Tenim un sopar molt elegant, o sigui que anirem a la xarcuteria i comprarem un **bon** pernil; un de pota negra.  
'We have an elegant dinner, so we'll go to the butcher and buy a good ham; a Pata Negra ham.'
- b. Hem d'alimentar un munt de persones, o sigui que anirem a la xarcuteria i comprarem un **bon** pernil; la qualitat no importa.  
'We have to feed a bunch of people, so we'll go to the butcher and buy a (lit.) good ham; quality doesn't matter.'

In (58) we have two interpretations of the phrase *bon pernil* 'good ham'. Context clearly teases apart the two readings. However, we have argued for Analysis 2 that we only need one lexical entry for substantive *good*, and that  $BON_{int}$  only arises under certain conditions of the modified N (see §3.2.1). We have seen that for Ns such as *esmorzar* 'breakfast' or *pernil* 'ham',  $BON_{int}$  is triggered when it can be accommodated that the only dimension that matters for evaluation is size. In this subsection, we will sketch an explanation for the role of prosody and gesture in disambiguating in favor of  $BON_{int}$ .

The special prosody that is applied to *bon* to give rise to intensification is a lengthening of the vowel. Crucially, the plain evaluative in (58-a) and  $BON_{int}$  in (58-b) – or even in cases where context does not favor one or the other reading – do not differ in tonal accent. The only difference is duration (and hence, there is a difference with the prosody found in contrastive focus, for instance).<sup>13</sup> We want to argue that the length of the vowel is used iconically (and hence paralinguistically), just like the accompanying hand gesture. That is, the speaker can lengthen the vowel so as to map the size of the duration with the size of the object in the extension of N.

Pending further research, we assume that iconic signs do not compose with the lexical meaning, but have to be compatible with it. If the speaker is conveying that she means a large size (either by means of prosodic lengthening, gesture or both), then it follows that she intends for the  $BON_{int}$  reading to arise. In doing this, she means for the addressee to infer that the only dimension that matters is size, and thus, that other dimensions are irrelevant. This is why, we suspect, disambiguation by prosody and gesture is usually accompanied by a hidden request for mutual understanding.

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<sup>13</sup>We are indebted to Maria del Mar Vanrell (p.c.) for pointing this out to us.

Previous literature has related prosody with secondary content. Potts (2005) analyzes the semantics of comma intonation in appositives as flagging that the meaning contributed by the apposition is delivered at the CI dimension. Gutzmann and Castroviejo (2011) analyze *verum focus* as contributing an expressive operator that applies to a proposition at the at-issue dimension and returns an instruction to downgrade this proposition from the Question Under Discussion (QUD). Westera (this volume) argues that Rise-Fall-Rise is a marker of the existence of a secondary QUD. Here, we are describing a different situation. Unlike focus marking, lengthening is not typically seen as a trigger of phonological contrast. We have shown that its effect in disambiguating is an indirect consequence of an iconic mapping. This said, we argue that such prosodic marking bears some of the properties of expressives, as characterized in Potts (2007). Not so much because it delivers a parallel, independent meaning that composes with the at-issue content, but because iconic prosody is performative, speaker-oriented, and it necessarily refers to the utterance time.

Certainly, in (59) (where multiple instances of ‘o’ are used to indicate vowel lengthening), prosody has the effect of flagging that the speaker means *BON<sub>int</sub>* rather than the plain evaluative (and multidimensional) *bon*.

- (59) un **booon** esmorzar  
 ‘a good breakfast’ ≈ a big breakfast

If vowel lengthening amounted to a regular expressive operator, it would combine with the at-issue meaning to contribute some related content to the CI/expressive or use-conditional tier (Potts 2005, McCready 2010, Gutzmann 2015). In this case, prosody runs in parallel, but it does not elaborate on the at-issue content, it is merely compatible with it. Therefore, it does not address a different or secondary QUD (Simons et al. 2010).

Although we have reasons to believe that this vowel lengthening is not a prototypical CI/expressive operator, if we apply tests for performativity, nondisplaceability or perspective-dependence, then the results are positive. Consider the following quote by Cruse (1986, 272), as cited in Potts (2007, 169).

Another characteristic distinguishing expressive meaning from propositional meaning is that it is valid only for the utterer, at the time and place of utterance. This limitation it shares with, for instance, a smile, a frown, a gesture of impatience [...]

A smile, a frown or a gesture of impatience belong to the same category as vowel lengthening in this particular case. To test for nondisplaceability, we can use the ill-formedness of (60).

- (60) Dóna’m un booon pernil, #però que sigui petit.  
 ‘Give me a good ham, but let it be small.’

(60) shows that the effect of vowel lengthening tells us something about the utterance time. In fact, if we embed it and its meaning cannot be attributed to the speaker, it is automatically interpreted as a quotation, because its meaning has to be attributed to the utterer who has performed the lengthening. This is shown in (61).

- (61) La Maria creu que ha comprat “un booon pernil.”  
 the Mary believes that has bought a good.EMPH.PROS ham  
 ‘Mary believes that she has bought “a big ham”.’

Going back to Cruse’s (1986) quote, the meaning contributed by vowel lengthening and gesture is inflicted and cannot be taken back, just like a smile or a frown. This is reminiscent of Stalnaker’s (1978) mention of the effect in context of a goat walking into a room. Observed facts change the common ground, just like the fact that a speaker is speaking, in the performative effect of an assertion.

Before resuming, we would like to mention the consequences of embedding vowel lengthening under negation, as in (62).

- (62) a. No hem comprat un bon pernil.  
 not have.1PL bought a good ham  
 ‘We did not buy a good ham.’  
 b. #No hem comprat un booon pernil.  
 Intended: We didn’t buy a big ham.

Vowel lengthening cannot be preserved under negation. It would give rise to a contradiction between what the prosody conveys and what the at-issue meaning conveys. The embedded sentence would convey that we bought a big ham, which would be inflicted by the use of vowel lengthening, but later on in the derivation, negation would deny that, which would be at odds with the inflicted meaning (i.e. the performative act) expressed in the embedded sentence.

From this alone, it follows that ambiguity is lost under negation. (62-a) only has the plain evaluative reading and emphatic prosody has a PPI behavior, which can be explained as a contradiction of the meanings conveyed at different dimensions, along the lines of Liu (2012, 2014) (cf. §1). In this sense, there is still secondary content in the intensifying use of *bon*, but it is not to be found in the meaning of *bon* itself (in the sense that it conveys at the non-at-issue tier, as was assumed under Analysis 1), but in the accompanying prosody.

Summing up, we have argued that a paralinguistic act of vowel lengthening (and iconic gesture) may accompany the utterance of *good* to indicate big size. While this is a secondary, performative meaning, it does not have the properties of ancillary commitments that build on the at-issue content to address a different QUD. That is, unlike, e.g., comma intonation, which applies to a propositional meaning and turns it into a secondary content that is relevant to a secondary QUD, emphatic prosody is a paralinguistic act that favors one reading of *bon* but has no effect on discourse structure.

## 4 Conclusions

This paper focused on an example of evaluative construction to reflect on the potential locus of secondary meanings. To this end, we presented and analyzed data from Catalan *bon* ‘good’, a subjective evaluative adjective that gives rise to an intensifying effect depending on the internal structure of the modified noun. In particular, we established that *bon* can have an intensifying reading when the nominal it modifies makes available only one unique dimension (or when such dimension is contextually highly salient) and it can be accommodated that big sizes are good. The fact that this interpretation disappears under negation could be explained in two ways, and we sketched such analyses.

Under Analysis 1, which we ultimately discarded, negation of at-issue content yields a contradiction at the non-at-issue tier. Under this account, intensification comes about via a monotonicity

inference that makes sure that any objects in the extension of the noun that are ordered higher than the predicate's argument should also count as good. By positing this piece of content in a different dimension, it is ensured that the negation of the at-issue content is incompatible with leaving the monotonicity inference untouched. While this yields the desired outcome with respect to negation, it also produced some undesirable results, the most pressing of which is that the monotonicity inference responsible for intensification does not behave like other non-at-issue (expressive) bearers. Additionally, we were forced to assume two different lexical entries for *bon*, which goes against simplicity.

Under Analysis 2, we built on previous work on multidimensional adjectives (Sassoon 2013, 2015) to propose that negation triggers the assumption of goodness in other dimensions (i.e. more than one dimension). Since one of the main conditions for the intensifying effect of *bon* to arise is unidimensionality, by entertaining more than one dimension plain evaluative *good* emerges. This account opens up yet another way of approaching alleged PPI behavior, i.e. incompatibility with negation, in addition to those already proposed in previous literature, such as anti-licensing in downward-entailing or non-/anti-veridical contexts or as a clash between content conveyed at the at-issue and the CI tier. In particular, we argued that in the case of  $BON_{int}$ , the PPI behavior is rather an illusion. Furthermore, incompatibility with negation was directly tied to the fact that  $BON_{int}$  does not have a negative counterpart and that it is not gradable, since we argued that both evoke multiple dimensions, making an intensifying reading unavailable.

This second view, we argued, is not devoid of secondary meaning, though. For nouns that give rise to both the plain evaluative and the intensifying reading of *bon*, we observed that emphatic prosody (i.e. vowel lengthening in *bon*) is responsible for disambiguation in favor of the intensifying reading. It has been proposed that emphatic prosody is a paralinguistic, iconic strategy that has some properties in common with expressives, as characterized in Potts (2007), although not all of them. For instance, it is performative and speaker-oriented, but it is not relevant to a different Question Under Discussion (Simons et al. 2010).

Among the questions that this research has opened up, we want to mention the need of a deeper study of the linguistic and paralinguistic secondary meanings channeled through prosody, since we could merely sketch the main idea here. Another topic that deserves further research concerns the lexical semantics of *good*. Especially, we would like to pursue a more fine-grained analysis of this adjective, one that decomposes the notion of approval. Additionally, we aim to gain a better understanding of the scalar properties of *good*. It is necessary to figure out and systematically test whether it is a lower bound or an open-scale adjective. We leave these considerations for future research.

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