Argumentative Properties of Pragmatic Inferences

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Abstract. In this paper we seek an explanation for the preference to use adversative connectives when reinforcing some implicatures. We begin by examining, and rejecting, an hypothesis according to which the nature of the implicatures can encode their argumentative properties. We then argue that this constraint is not due to the nature of the inferences at hand but rather to distinct argumentative relations between the propositions expressed in the discourse. We provide a solution in an argumentative framework and then extend our observations to cases including an overt restriction rather than implicatures. We conclude by looking at various explanations for the source of the preference we observe.

This paper seeks to provide an explanation for one of the often overlooked discourse constraints that intervene when cancelling or re-asserting the content of some implicatures. Conversational implicatures, as described by Grice (1989), are part of the meaning of a sentence that doesn't belong to what a speaker *said* in Grice's favoured sense. As such, they can supposedly both be freely reasserted and explicitely cancelled since they were never actually uttered and thus never "officially" endorsed by the speaker. As we'll show in this paper, it turns out that the discourse segments reasserting or cancelling implicatures can only be connected to the utterance that gives rise to the implicature by some specific discourse connectives.

In our first section we give the hypothesis we'll assume about the meaning of adversatives and show that implicatures have different argumentative behaviours. In the second section we test the hypothesis of an inference-type based argumentativity. We show how this approach is flawed and in the rest of this work we aim at giving an explanation of these facts in an argumentative perspective based on the works of Anscombre and Ducrot and later proposals by Merin. We show how their argumentative approach to pragmatics provides a straightforward explanation for the licensing of adversatives when reinforcing some implicatures. We also underscore how an *exhaustivity* account (as expounded by van Rooij (2004)), that also includes argumentativity, allows the same kind of predictions. Besides *licensing* it, this opposition seemingly *requires* the presence of contrast. We propose two different views to explain this preference in the fourth section.

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1 Overview of the Data

1.1 Core-data

The data presented in (1) is our prime example of study. In (1b), B's answer is interpreted as carrying with it the implicature in (1c)[1]. This is a standard example of *scalar implicature* as presented, among others, in (Horn 1989).

(1) a. *A:* Do you know whether John will come?
b. *B:* It's possible
c. +>It's not sure (that John will come)
d. *B:* It's possible, but it's not sure

The inference (1c) can be reinforced as in (1d). What interests us is that an utterance such as (2), without an adversative discourse marker, sounds degraded compared to (1d) (as an answer to (1a)).

(2) *B:* # It's possible and it's not sure

The preference for (1d) over (2) is somehow unexpected. Since the implicature (1c) is non-controversially conveyed by the utterance of (1b), one has to explain how it can be construed as "opposed to" or as a "denial of expectation of" the utterance that allowed its presence in the first place (as suggested by the adversative *but*). A similar fact is already noted in (Anscombre and Ducrot 1983) about example (3).

(3) Pierre s'imagine que Jacques et moi sommes de vieilles connaissances, mais pourtant on ne s'est jamais rencontrés
Pierre figures that Jacques and I are old-time friends, but we never met

Example (3) illustrates the difference between their notions of argumentation[2] and inference. In the case of (3), although the first part of the utterance allows an inference towards the second part, it is nevertheless argumentatively opposed to it and thus licences a contrast. Horn (1991) shows that, more generally, any kind of content related to an utterance U (by relations of implicature, presupposition, logical entailment...) can be felicitously reasserted as long as it is argumentatively opposed to U. Therefore, as unexpected as the preference for a contrast might be in (1d), the situation appears common.

This prompts us to look at the argumentative properties of the implicatures relative to their mother-utterance. More precisely, what we intend to find is

[1] We use the notation $A+>B$ to mean that the utterance of A implicates B

[2] The notion of *argumentation* is rooted in Anscombre and Ducrot's view on discourse. According to them, a speaker always *talk to a point* and his utterances *argue* for a certain conclusion, quite often the topic of the discourse, which may or may not be explicit. Merin considers that understanding what is this topic is what *"figuring out the speaker's apparent and real intentions"* is about. Anscombre and Ducrot consider that some linguistic items or structures, such as *almost*, bear specific argumentative properties and thus entertain a systematic argumentative opposition or correlation with other propositions.

whether the content of implicatures stands in a systematic argumentative opposition with the content of their mother-utterances (regarding a certain goal). We shall call this the *argumentative relation* between the two propositions. Two configurations are possible:

1. The argumentative relation between implicature and mother-utterance depends on the *nature of the inference*. Different types of implicatures would have different, systematic, argumentative properties, entirely predictible by the mechanisms that gave rise to them. This hypothesis would be desirable because it gives a precise content to the notion of *argumentativity*.
2. The argumentative relation between implicature and mother-utterance is variable and depends on the *context of utterance*. The same inference could entertain one given relation in a context and the opposite in another.

The first option has already been proposed in the litterature and we examine it in Sect.2. We show that this leads to a number of wrong predictions and then go on to explore the second option in Sect.3.

On a last note about the core-data, we wish to mention the case of the scale of quantifiers: $\langle all, some \rangle$. Usually, scalar implicatures are exemplified with this latter scale, as in (4).

(4) a. *A:* How is your experiment going?
b. *B:* I tested some of the subjects.
c. $+>B$ didn't test all the subjects.
d. *B:* I tested some of the subjects, but not all.
e. *B:* # I tested some of the subjects, and not all.

We prefer to rely on (1) because the preference for using an adversative appears stronger in (1d) than in (4d). Neither (2) nor (4e) can be entirely ruled out. Both can be used as *corrections* of a previous statements (in those cases they would probably have specific prosodic patterns). But we also observe that the preference for marking a contrast is less strong for the examples with quantifiers outside of correction cases. Simple Google searches for the french *quelques-uns et pas tous* or english *some and not all* yield several thousands of occurrences, not all of them corrections, whereas a search for *possible and not certain* only provides results of the form ***only*** *possible and not certain*. The presence of the adverb *only* restricts the meaning of *possible* and these examples aren't conclusive compared to the *some and not all* ones. However, the effect of *only* is an interesting one and we shall return to it below.

1.2 The Meaning of Adversatives

Anscombre and Ducrot (1977) first described the contribution as *but* as in (5)[3].

(5) A sentence p *but* q is felicitous iff. p is an argument for a proposition H and q is an argument for $\neg H$.

[3] We focus on one meaning of *but*, that corresponding to german *aber* or spanish *pero*. For a presentation of the different meanings of *but* see (Anscombre and Ducrot 1977).

We assume this description of the adversative connective throughout this paper. Ducrot doesn't give a precise definition of the notion of argumentativity. One of the aims of this work is to examine the possibility to reduce this notion to that of inference, at least in our cases of interest. We shall however show that the two concepts can not coincide.

About *Contrastive But* A very frequent use of *but* is often described as *contrastive*. Example (5) shows a contrastive use of *but* which implies a contrast between two sentences, or linguistic elements, rather than between two argumentations.

(6) a. Jean porte un pull rouge, mais Marie porte un pull bleu
John wears a red sweater, but Mary wears a blue sweater

At least in French, possibly in English, we can rely on a substitution test to distinguish between a contrastive and an argumentative use of *but/mais*[4]. If a sentence *"p mais q"* (i.e. *"p but q"*) can be replaced by *"Bien que p, q"* (i.e. *"Although p, q"*) without inducing further assumptions or inferences, then the use of *but* can be said to be argumentative. Whereas, if the resulting sentence is hard to accommodate and requires further assumptions (namely to infer a direct argumentative opposition), the use of *but* in the base utterance is contrastive. We show this test on the french sentence in (7). Interpreting it felicitously would mean that John wearing a red sweater normally entails that Mary doesn't wear a blue one, something that isn't understood in (6).

(7) a. # Bien que Jean ait un pull rouge, Marie a un pull bleu
? *Although John wears a red sweater, Mary wears a blue one*

Applying the test to our core-data shows that *although/bien que* can be used without inducing a further effect:

(8) a. C'est possible, mais ce n'est pas sûr
It's possible, but it's not sure
b. Bien que cela soit possible, ce n'est pas sûr
Although it's possible, it's not sure

We conclude that the use of *but* in those examples isn't contrastive. Although we won't show the tests everytime, all uses of *but* in this paper will be argumentative.

1.3 Extended Data

Besides our core-example, we observe differences in the argumentative behaviour of implicatures.

[4] I thank Jacques Jayez for pointing that out to me.

Adversary Implicatures We call *adversary* implicatures those that stand in an argumentative opposition with the utterance that conveys them. To test this opposition we rely on the use of *but* to connect an utterance and its implicature. The case of scalar implicatures, already shown in (1d) belongs to this class. The exemples in (9) show that clausal implicatures in (9a) (as first described by Gazdar (1979)), implicatures based on attitude predicates in (9b), implicatures based on the maxim of Manner in (9c), all appear to be adversary implicatures.

(9) a. Bill is in the kitchen or the living room, ?(but) I don't know which
b. John thinks that Mary is pregnant, ?(but) she's not
c. Sam caused Max's death, ?(but) he didn't kill him on purpose

Allied Implicatures We call *allied* implicatures those that share the same argumentative orientation as the utterance that conveys them. Several examples are given in (10): conjunction buttressing, conditional reinforcement etc.

(10) a. # Gwen took off her socks and jumped into bed, but in that order
b. # If you finish your thesis by September you'll be eligible for the job, but only in this case
c. # Billy cut a finger, but it was his
d. # Sam and Max moved the piano, but together

It should be noted that the sentences in (10) are out only under the assumption that the considered implicatures are present (i.e. those expressed by the second conjuncts). It is easy to imagine contexts for which all these sentences are correct. For example, if sentence (10c) is uttered about some mafia henchman who breaks other people's fingers on a daily basis, the sentence is quite felicitous, but the implicature we're interested in isn't conveyed and nothing can be said about its argumentative orientation.

2 Argumentativity as Inference

In this section we test the hypothesis that the adversary/allied distinction amounts to a distinction between different types of implicatures. To test the hypothesis we use a classical Neo-Gricean framework, and more precisely Horn's distinction between Q-based and R-based implicatures.

2.1 The Q/R Distinction

In (Horn 1989) the derivation of implicatures is reduced to two opposed principles, based on considerations of economy.

– The Q-principle generates implicatures from stronger, more informative, relevant forms the speaker could have uttered but chose not to. This amounts to an economy for the hearer because the speaker *"says as much as possible"* and thus minimizes the effort the hearer needs to produce to interpret the utterance. All implicatures related to Grice's first maxim of quantity and the maxim of manner are *Q-based* implicatures.

– *R-based* implicatures are enrichments of an utterance related to underspecified aspects of the propositional content. This principle means an economy for the speaker because he relies on *stereotypes* to minimize the content of his utterance.

Horn's Q and R principles are quite similar to the Q and I-principle found in (Levinson 2000), except that Horn's Q-principle is broader than Levinson's, and includes Levinson's M-principle.

2.2 Correlation between Q/R and Adversary/Allied implicatures

Benndorf and Koenig (1998) worked on data related to (1) and (4). They were interested in the dual operation of reinforcement, namely *cancellation*. They observe that the implicatures that can be felicitously cancelled using an adversative connective are exactly the implicatures that were described as *R-based*. We briefly sum up their main observations and conclusions and then show how their proposals aren't satisfactory.

***R-based* Implicatures** Examples of the cancellation of *R-based* implicatures are presented in (11). An adversative connective is preferred to connect the two discourse segments.

(11) a. Gwen took off her socks and jumped into bed, but not in that order
b. If you finish your thesis by September you'll be eligible for the job, but not only in this case
c. Billy cut a finger, but it wasn't his
d. Sam and Max moved the piano, but not together

These examples are the same as in (10), but with the second conjunct cancelling the implicature.

***Q-based* Implicatures** All the implicatures presented in (9) are instances of *Q-based* implicatures. Unsurprisingly, these inferences apparently can't be cancelled with an adversative connective; a reformulative connective is preferred:

(12) a. Bill is in the kitchen or the living room, (?but/and in fact) I know which
b. John thinks that Mary is pregnant, (?but/and in fact) she is indeed expecting a child
c. Sam caused Max's death, (?but/and in fact) he actually killed him on purpose
d. It's possible that John will come, (?but/and in fact) it's a sure thing

2.3 Argumentation as an Inference Mechanism

Since *R-based* implicatures are the only implicatures that can be cancelled with an adversative, Benndorf and Koenig identify the *R-based* nature of inferences to that of argumentativity by adapting Ducrot's description of *but* as in (13).

(13) A sentence p *but* q is felicitous iff:
- H is an R-implicature or a world inference derived from p
- q together with the common ground entails $\neg H$

Their motivation is to provide an inference-based description of the meaning of *but*. If we extend their conclusions, we identify allied implicatures with *R-based* ones, and thus adversary implicatures with *Q-based* ones, as strongly suggested by the data.

2.4 Problems with the Account

The previous generalization isn't satisfactory for two main reasons. First counter-examples can be found, second some Q-implicatures do not show the expected argumentative behaviour.

Counter-examples Should we find a context such that the cancellation of a *Q-based* implicature is marked by an adversative connective the previous generalization would be flawed. We believe (14) is such an example, where *some* in the Father's answer is understood as *not all*, an interpretation that gets cancelled with an adversative.

(14) a. *Mother:* I hope that Kevin has been polite with Granny and has managed to eat some of her terrible cookies.
b. *Father:* He did eat some of them, but in fact he ate all of them, so Granny said that he was greedy.

One could argue that the implicature from *some* to *not all* in (14b) isn't *Q-based* but *R-based* in this particular case, and therefore still satisfies the criterion for argumentativity. This would mean that, depending on the context, there are two different mechanisms for drawing the same inference. Since the implicature in (14b) appears very similar to the one in (4c), up to the fact that cancelling it demands a reformulative item such as *in fact*, this appears to be a very *ad-hoc* answer. Furthermore, nothing prevents the derivation of the targeted implicature by the Q-principle. One then needs to explain the interaction of the two principles when they produce the same inference (a similar point was already made by Carston (1998)).

Another objection to this example would be that the use of *but* is truly argumentative in (14b), whereas it's only contrastive in the previous examples of scalar implicatures such as (1d). However, as we have shown in Sect.1.2 this isn't the case: all the uses of *but* that we consider are argumentative.

Turncoat inferences Example (15b) is often considered to mean (15c) by the derivation of a Q-implicature based on a *contrast set* (for details see for example (Levinson 2000)). This is an intriguing case because the argumentative relations at hand do not behave as other instances of Q-implicatures.

(15) a. *A:* Who came to the party?
b. *B:* Bill and Ted
c. +>No one else came to the party

The preferences for discourse relations when reinforcing or cancelling these implicatures do not match those in (9), nor are they closer to the ones in (10):

(16) a. *B:* Bill and Ted, (and/but) no one else — (and/but) not George
b. *B:* Bill and Ted, (and/but) also many other people — (and/but) also George

One needs a specific context to judge whether an adversative or a simple conjunction would be better. The preferences might also be different according to the expression given to the content of the implicature (*No one else came to the party* vs. *George/Kim/etc. didn't came to the party*). We call these inferences *turncoat* because they do not appear to be argumentatively adversary or allied. According to the hypothesis we are evaluating this should not be the case: all implicatures derived from the Q-principle should be adversary.

Conclusion As a conclusion we reject the hypothesis according to which the nature of an inference directly gives its argumentative properties. Not only will it enable us to treat the inferences in (14b) and (4c) in a parrallel manner, but it should also provide insight in cases where the presence of an implicature is dubious. As shown by various recent experimental data (Breheny et al. 2005; Noveck and Sperber 2007) implicatures are not generated by default but only on a case-to-case, context-specific, basis. Yet it seems that the preference for a contrast goes beyond these particular cases, including cases for which no implicature seems to be derived as it appears to be in (17).

(17) a. *A:* Is there even a remote possibility that John will come?
b. *B:* Yes, it's possible, (but) it's not sure

The arguments were given assuming a neo-Gricean treatment of implicatures, but they remain sound for other approaches that do not take argumentativity into account. The roots of our puzzle are in the argumentative relations between propositions rather than between an utterance and its inferences.

This could make the explanation of our core data much simpler. Taking the meaning of *some* as *more than 2 and possibly all*, there is a clear opposition with a *not all* interpretation. Things are however a bit more tricky: as shown by (14b) the argumentative relationship between the *some* and *not all* propositions can vary. Therefore the explanation ca not rely on purely semantic opposition either.

3 The Argumentative Approach

In this section, we begin by presenting the basis of an argumentative approach to inferential pragmatics. We base our presentation on the propositions of Ducrot and their later formalization by Merin.

Once these various elements are defined, we see how they fit together to explain the data presented in Sect.1 and extend our observations to cases including an overt restriction.

3.1 Base Mechanisms

Our examples involve two distinct, well-known, concepts. First, these utterances involve the use of an adversative marker such as *but*. Second, their interpretations rely on the derivation of *conversational implicatures*. Argumentative treatments of both these concepts are described below with a side-note on an *exhaustivity*-based approach. A good presentation of all systems is given in (van Rooij 2004) and this will be our main inspiration in this section.

Adversatives Merin (1999) adopts a probabilistic approach of Ducrot notion of argumentation. He identifies the notion of argumentation with that of *relevance*, as defined by Carnap[5].
Roughly, given a probability P over possible, accessible worlds, a proposition p argues for a proposition q, iff p is positively relevant to q, i.e. iff knowing p increases the probability of q. For Merin, the relevance of a proposition is defined regarding a particular proposition H: the goal of the discourse. In this he differs from Ducrot who considered that a proposition had systematic argumentative properties. For example, a sentence *almost* p always argues in the same way as p although it conveys $\neg p$, as shown in (18).

(18) Mary almost fell but she caught herself.

Our data suggests an interpretation more in line with Merin's proposal.

The description (5) gets the new formulation given in (19) (where $r_H(p)$ stands for the relevance of proposition p to proposition H):

(19) p *but* q is felicitous iff there is a prop. H s.t. $r_H(p) > 0$ and $r_H(q) < 0$

Both Ducrot and Merin consider that the absolute value of the relevance of the second conjunct should be higher than that of the first conjunct. This point has been discussed in (van Rooij 2004) and since it has little bearing on the rest of this work, we ignore this part of the description of the meaning of *but*.

Implicatures The proper derivation of implicatures has known various refinements in the argumentative perspective. The main argument behind this approach to implicatures is the possibility to give an account of various cases where no logical entailment scale is at play, although there is indeed a preference over propositions. Ducrot, and Merin after him, proposes to replace the ordering of items based on logical relations by a relevance-based order. The ordering of the

[5] This notion of relevance is distinct from the one proposed by Sperber and Wilson (for a recent presentation see (Wilson and Sperber 2005) and for the differences between the two see (Merin 1999)).

items is determined by argumentative force relative to the issue at hand. A good illustration, taken from (Hirschberg 1985)), is given in (20). In the context of a job interview, it would be more relevant if Jane spoke Portuguese. Her answer is interpreted as the "next-best" answer, from which we infer that she does not speak Portuguese.

(20) a. *Recruiter:* Do you speak Portuguese?
b. *Applicant Jane:* My husband does.
c. +>Jane doesn't speak Portuguese.

The apparent ordering of items by informativity in our core-examples (typically assumed in neo-Gricean approaches) is due to the fact that more informative propositions usually have higher argumentative values. In (Ducrot 1980):61 the derivation of an implicature such as (1b) is as follows:

- $\langle sure, possible \rangle_H$ is an *argumentative scale*, i.e. a simple utterance including *sure* has more argumentative power, regarding a certain conclusion H, than one relying on *possible*, and *possible* has a semantic "at least" interpretation
- the utterance of (1b) gets further interpreted by an *exhaustivity law* similar to standard Gricean reasoning that yields the desired meaning: since an argumentatively superior utterance relying on *sure* was not used, one is entitled to infer that the corresponding proposition is false

Merin's approach formalizes this in a slightly different way by postulating that in conversation a speaker S and a hearer H play a game such that they have *opposed* preferences. Roughly, S makes *claims* that the skeptical hearer H will try to *concede* in the less defavourable way possible for him. The content of S's claim, when asserting p, is the set of propositions that are *at least* as relevant to G, the issue at hand, as is p (Merin calls this set the *upward relevance cone* of p). The set of propositions that H is willing to concede is p's *downward relevance cone*: the set of propositions such that they are *at most* as relevant to G as p is. The net meaning of p is the intersection of the two cones which corresponds to the interpreted meaning.

Whatever the version one wishes to adopt, one fact remains true for all argumentative approaches: if p is an utterance from which a conversational implicature q is derived in either of the aforementioned manners, then q is the negation of a proposition $p' = \neg q$ that is argumentatively superior to p. Therefore p and q are *necessarily argumentatively opposed* (since by Ducrot's *law of inversion* $sign(r_H(\neg p)) = -sign(r_H(p))$).

This last fact readily explains why, in the cases where an implicature is indeed derived as such, the argumentative properties of utterance and implicature are compatible with the requirements of an adversative like *but*.

The Case of Exhaustivity van Rooij (2004) argues against some of the claims of Merin by showing how an exhaustivity-based approach accounts for the same data without running into some of the problems of Merin's approach. To treat all of Merin's examples he proposes a definition of exhaustivity that relies on

argumentative properties, represented by *relevance*. We reproduce this definition in (21).

(21) $exh(A, L, h) = \{t \in [A] | \neg\exists t' \in [A] : t' <_h^L t\}$, where
- A is the sentence to be interpreted
- L is the set of alternatives induced by the expression
- h is the conversation's goal
- the ordering of states is defined as:
  $t' <_L^h t$ iff $V(h, \bigcap\{[B] | B \in L, t' \in [B]\}) < V(h, \bigcap\{[B] | B \in L, t \in [B]\})$
- V is a relevance function, possibly the same as Merin's, but not necessarily

An exhaustive interpretation of a sentence A contains all states that verify A and for which no more minimal state exists that also verifies A. The definition used here orders states on argumentative grounds. What changes from Merin's account is the actual mechanism for deriving inferences: intersection of relevance cones for Merin and exhaustification for van Rooij. This actually does not matter much to us. What matters is that all these mechanisms use a relevance function as a representation of the argumentative properties of a proposition and that the resulting implicatures have relevances that are signed differently from their mother-utterances. Thus, the compatibility between the derivation of implicatures and the semantics of adversatives remains a property of the exhaustivity framework.

3.2 On the Explicit Presence of Stronger Terms

We already remarked that items such as the restrictor *only* allowed some discourse forms that would otherwise be odd, namely discourses using the argumentatively neutral connective *and*. An example is given in (22).

(22) It's only possible and not sure.

The properties of *only* conventionally exclude a stronger proposition, as shown by the impossibility of (23).

(23) # It's only possible and in fact sure.

The negation of the stronger proposition is then redundant and its argumentative orientation is similar to the *only*-sentence. According to (Horn 1991), (22) should not be felicitous either because the second conjunct is redundant without being argumentatively opposed to the first. Most speakers feel that (22) comes as a correction of a previous statement (i.e. one that asserts the certainty of the discussed event) and thus the second conjunct would be *echoic*, which would license its presence in (22). Another possibility is to assume that the whole utterance (22) comes as an answer to a question such as *Is it sure?*, and that the second segment is the congruent answer to this question, expressed as a consequence, or result, of the first segment.

In the case of non-entailement based scales the results are the same: (24a) is good and (24b) is not (when placed in the same context as (20)). Here again, the second segment of (24a) can be easily understood as linked by a consequence relation with the first.

(24) a. Only my husband speaks Portuguese, I don't
b. # Only my husband speaks Portuguese and in fact I also do.

In the presence of an overt restriction, the use of an adversative ca not be automatically licensed like in the case of implicatures. We do not claim that it is impossible, but rather that using an adversative connective would convey more than the content of the two conjuncts (whereas in our core-data the contribution of the adversative is less clear, if not completely transparent). The resulting sentences are hard to judge and almost impossible to find with simple searches on corpora. Examples are given in (25). We give french equivalents in (26) for which we have slightly more confident judgements.

(25) a. ? It's only possible, but not sure.
b. ? Only my husband speaks Portuguese, but I don't.
c. ? Only some students skipped class, but not all.

(26) a. ? C'est seulement possible, mais pas certain.
b. # Seul mon mari parle Portugais, mais pas moi.
c. ? Seuls quelques élèves ont séché les cours, mais pas tous.

Because we ca not confidently judge those examples, such data should be further investigated by experiment and deeper corpora-studies. At least in French, the examples including presumptive scalar terms ((26a) and (26c)) are preferred to those relying on purely contextual argumentative scales (as in (26b)). It might be that these particular uses of *but* are accepted out of habit due to the strong tendency to use it in the absence of *only* (as in our core-data). Finally, the differences between examples with an overt restriction and those inducing a scalar implicatures could also prove relevant to the proposition advanced by Chierchia, Fox and Spector (to appear) according to which a restriction operator like *only* yields the same effect as the mechanism of scalar implicature.

Similar considerations can be made about the item *at least*. Instead of restricting the denotation of a proposition, it widens it. The data in (27) (also shown in French in (28)) shows that, even though the usual presumptive implicatures are not derived, the possibility to reinforce their putative content still demands an adversative connective.

(27) a. It's at least possible, but not sure.
b. ? At least my husband speaks Portuguese, but I don't.
c. At least some students skipped class, but not all.

(28) a. C'est au moins possible, mais pas certain.
b. ? Il y au moins mon mari qui parle Portugais, mais pas moi.
c. Au moins quelques élèves ont séché les cours, mais pas tous.

To be entirely felicitous these examples need a third-party proposition to be construed in the argumentative scale which the two discourse segments belong to. For example, in (27a) the relevant proposition would be along the lines of *It's probable*. If no obvious candidate is available, then the sentences are hard to interpret as in (27b). In that latter case, if no salient person other than Jane and her husband is available then the answer does not make much sense.

3.3 *R-based* implicatures

Utterances contrasting the content of an *R-based* implicature with its mother-utterrance are odd (cf. (10)) and interpreting these utterances felicitously implies contexts such that the targeted implicature does not arise in the first place. For these particular inferences, it seems that we can argue for a systematic argumentative orientation regarding their mother-utterance.

Contrary to their *Q-based* counterparts, *R-based* implicatures lack a propositional content of their own (as noted for example in (Levinson 2000)). Expressing them linguistically amounts to explicitely expressing an enriched version of the mother-utterance. Thus, expressing a contrast between an utterance B and the linguistic expression I of an hypothetical R-implicature attached to B means contrasting two identical propositions: if B indeed carries an implicature, its full interpretation is I and B *but* I should be interpreted as I *but* I. The only way to "redeem" the sentence is to reject the implicature I associated with B and interpret B literally or with another implicature. As things stand, we consider that the argumentative behaviour of these inferences is the same as their mother-utterances.

4 The Source of the Preference

We gave arguments to explain why the examples we are interested in systematically license a contrast. We gave no arguments as to why this contrast is *preferred* when overtly marked.

4.1 Maximize Redundancy

A possibility we want to examine is the application of a principle close to Sauerland's *"Maximize Redundancy"*, as stated in (Sauerland 2008). This principle can be roughly paraphrased as urging a speaker to prefer, among a set of alternatives, a sentence that presupposes an already existing proposition over a sentence that presupposes nothing. Thus, a speaker should prefer saying *the father of the victim* rather than *a father of the victim* because the former presupposes a non-controversial proposition. Uttering the latter would suggest that the presupposition does not obtain, contrary to common knowledge. Applied to our case, this means that, given two propositions p and q such that they always are argumentatively opposed, a speaker will prefer to utter p *but* q rather than p *and* q. The second one would suggest that a contrast does not hold between p and q and thus contradict the argumentative configuration, or at least make the speaker sound "dissonant". At this stage we need to further back up this claim on at least two counts:

1. by ensuring that the non-felicitousness of (4e) is related to, and of the same order as, that of utterances such as *"a father of the victim"* usually treated in works about the discussed principle

2. by ensuring that the predictions made by the Maximization principle apply to the cases we study; the notion of presupposition used by Sauerland is technical and does not necessarly apply to the contrast conveyed by the use of *but* (i.e. what is often called a conventional implicature rather than a presupposition). At the very least, the principle needs to be broadened to different types of content.

4.2 Properties of Contrast

An alternative explanation for the preference for a marked contrast would be to consider this preference as an idiosyncratic property of the relation at hand. This would be in line with the approach of Asher and Lascarides (2003), where it is claimed that the semantics of the relation of *Contrast* (as defined in *SDRT*) are such that the relation requires a specific clue to be used; either an overt cue element such as *but* or intonation alone. Therefore, the preference we observe for adversatives would be a consequence of the particular semantics of the relation of *Contrast*. For example, the first and second segment of (29) are opposed: that John does not like hockey is a default consequence of the first segment; since this relation of opposition is already present, it needs to be overtly marked.

(29) John hates sports, but he likes hockey.

However, the argumentative relations between propositions are not always obvious. An example such as (30) (taken from (Horn 2005)) is a good illustration: if one does not know, among other possible reasons, whether the speaker has a great or small appartment, one can not decide whether it would be a good or a bad thing for the speaker to have all its friend coming to his party.

(30) If some of my friends come to the party, I'll be happy, but if all of them do, I'll be in trouble.

In that case, when the speaker uses an adversative, the quantifiers are reinterpred in the way suggested in (Horn 2005). If it is evident that the speaker can not accommodate all his friends, then the need for reinterpretation is less evident; it is rather the presence of an adversative that is forced to the speaker because of an opposition that is already present. This amounts to say that the presence of an explicit *Contrast* marker has two possible sources: either the speaker wishes to coordinate two propositions that stand in a systematic argumentative opposition (our core data and (29)), or he wishes to convey that a non-obvious opposition holds between the two ((30) and others such as *She's poor but honest*). If the processing of a discourse is seen as an unification process, the exact source for the choice of the adversative does not matter; what matters is that the requirements of the connective match the argumentative properties of the propositions it connects and vice-versa. In the case their relation are not evident, they should be imagined as being under-specified and specified by the adversative.

A last set of fact we wish to take into account is related to other cases of systematic argumentative opposition. We already remarked that an utterance of

the form *almost p* is argumentatively opposed to $\neg p$, in the same way our core data implicatures are with their base-utterances. What we observe is that an utterance of the form *almost p,* $\neg p$ is acceptable with and without contrast, as exemplified in (31).

(31) Mary almost fell, (but) she caught herself.

There is a slight difference in interpretation between the *but* and *but-less* versions, pertaining to the discourse relation that connects the two parts of the discourse. While in the former case a contrast is conveyed, in the latter it is an *explanation* (a relation compatible with the null discourse connective). In this case, an argumentative opposition still exists between the two parts (due to the argumentative properties of *almost*) but the speaker seems to favour another relation and uses a connective incompatible with the expression of argumentative opposition. The statistics given on the *RST* website[6] show that the proportions of signaled relations in texts amount to only 30%, meaning that most relations are not explicitely marked in discourse. This could be another argument for the idiosyncratic treatment of the contrast relation and its markers.

5 Conclusion

We observed what seemed to be a constraint on the felicitous reinforcement of some implicatures. The first hypothesis to account for this data meant reducing argumentativity to an argumentativity-independent inference mechanism and was rejected because it proved to be descriptively inadequate. We then took an argumentative approach to discourse and showed that adversatives were legitimated to reinforce some implicatures on the basis of the argumentative properties of the propositions they express. Put more simply, the choice for an adversative is not linked to inferences, but as it happens the content of some implicatures is often argumentatively opposed to the utterance that conveys them, and thus an adversative is licensed for their reinforcement. Finally we studied cases including an overt restriction, but were faced by the difficulty to give definitive judgments about utterances including both a restriction and adversatives.

We still have to give a definitive explanation for the preference for contrast, although a general principle of *mark-if-present* seems to be at work. We gave two possible reasons for it, and we intend to study this in our future research with an experimental approach. The results of these experiments could provide support for the argumentative approach to semantics and pragmatics we presented.

References

J.-C. Anscombre & O. Ducrot (1977). 'Deux mais en français'. *Lingua* **43**:23–40.
J.-C. Anscombre & O. Ducrot (1983). *L'argumentation dans la langue*. Pierre Mardaga, Liège:Bruxelles.

[6] http://www.sfu.ca/rst/02analyses/index.html

N. Asher & A. Lascarides (2003). *Logics of Conversation*. Cambridge: Cambridge University Press.

B. Benndorf & J.-P. Koenig (1998). 'Meaning and context : German aber and sondern'. In J.-P. Koenig (ed.), *Discourse and cognition : bridging the gap*, pp. 365–386. CSLI Publications, Stanford.

R. Breheny, N. Katsos & J. Williams (2005). 'Are Generalised Scalar Implicatures Generated by Default? An on-line investigation into the role of context in generating pragmatic inferences'. *Cognition* .

R. Carston (1998). 'Informativeness, Relevance and Scalar Implicature'. In R. Carston & S. Uchida (eds.), *Relevance theory: Applications and Implications*. John Benjamins.

R. Carston (2005). 'Relevance Theory and the Saying/Implicating distinction'. In L. Horn & G. Ward (eds.), *The handbook of Pragmatics*. Blackwell.

G. Chierchia, D. Fox & B. Spector (to appear). 'The Grammatical View of Scalar Implicatures and the Relationship between Semantics and Pragmatics'. In P. Portner, C. Maienborn & K. von Heusinger (eds.), *Handbook of Semantics*. Mouton de Gruyter

O. Ducrot (1980). *Les échelles argumentatives*. Les Éditions de Minuit.

G. Gazdar (1979). *Pragmatics: Implicature, Presupposition and Logical Form*. New York : Academic Press.

H.P. Grice (1989). *Studies in the way of words*. Harvard University Press.

J. Jayez & L. Tovena (2008). 'Presque and almost: how argumentation derives from comparative meaning'. In O. Bonami & P. Cabredo Hofherr (eds.), *Empirical Issues in Syntax and Semantics*. vol. 7, pp. 1–23.

J. Hirschberg (1985). *A theory of scalar implicature*. Ph.D. thesis, University of Pennsylvania.

L. Horn (1989). *A natural history of negation*. The University of Chicago Press.

L. Horn (1991). 'Given as new: when redundant information isnt'. *Journal of Pragmatics* **15**(4):313–336.

L. Horn (2005). 'The border wars: a neo-gricean perspective'. In Turner et al. (eds.), *Where Semantics Meets Pragmatics*, pp. 21-48. Elsevier.

S. C. Levinson (2000). *Presumptive Meanings: The Theory of Generalized Conversational Implicature*. MIT Press, Cambridge, MA, USA.

A. Merin (1999). 'Information, Relevance and Social Decision-Making'. In L. Moss, J. Ginzburg, & M. de Rijke (eds.), *Logic, Language, and computation*, vol. 2, pp. 179–221. CSLI Publications, Stanford:CA.

I. Noveck & D. Sperber (2007). 'The why and how of experimental pragmatics: The case of 'scalar inferences''. In N. Burton-Roberts (ed.), *Advances in Pragmatics*. Palgrave Macmillan, Basingstoke.

U. Sauerland (2008). 'Implicated Presuppositions'. In A. Steube (ed.), *Sentence and Context. Language, Context & Cognition*, Mouton de Gruyter, Berlin, Germany. (to appear)

R. van Rooij (2004). 'Cooperative versus argumentative communication'. *Philosophia Scientia* **2**:195-209.

D. Wilson & D. Sperber (2005). 'Relevance Theory'. In L. Horn & G. Ward (eds.), *The handbook of pragmatics*. Blackwell.