# Argumentation and Information Structure in the meaning of the Adversative *Mais*

Grégoire Winterstein

Sinn und Bedeutung 14 - 28–30 September 2009

## 1 Introduction

**[Lakoff, 1971]'s two-fold distinction about *But***

- **Semantic opposition:**

  (1) Lemmy joue de la basse, mais Ritchie de la guitare.
  *Lemmy plays the bass, but Ritchie the guitar.*

- **Denial of Expectation / Concessive:**

  (2) Lemmy fume depuis 40 ans, mais il est en parfaite santé.
  *Lemmy has been smoking for 40 years, but he's in perfect health.*

**Usage of *But***

| Semantic Opposition | Concessive |
|---|---|
| Two Contrastive Pairs | Violated expectation |
| Symmetric | Asymmetric |
| Paraphrasable by *and* | Paraphrasable by *although* |

**Contrastive Pair:** two elements form a contrastive pair if they are both similar and dissimilar/distinct (e.g. [Zeevat, 2004]).

**Violated Expectation:** the second conjunct expresses an unexpected state of affair, given the first conjunct and world-knowledge.

**Symmetry:** a coordination is said to be *symmetric* if reverting the conjuncts does not affect the meaning of the whole.

**Traditional Accounts**

**Argumentation:** the core meaning of *mais/but* lies in its argumentative properties (e.g. [Anscombre and Ducrot, 1977], [Merin, 1999])

**Semantic Contrast:** denial of expectation and concessive interpretations are an over-interpretation of the contrastive meaning of *mais/but* (e.g. [Umbach, 2005])

**Ambiguity:** *mais/but* is ambiguous and needs distinct descriptions for distinct uses (e.g. [Izutsu, 2008])

**General Claims**

1. A single description is sufficient for both readings.
2. The semantics of *mais/but* rely on an *argumentative strength* constraint (which puts symmetry into question).
3. The information structure of the utterance is reflected in the strength constraint.

# 2 Motivating Data

**Key Example**

(3) Lemmy a répondu à toutes les questions mais Ritchie à quelques-unes.
*Lemmy answered all the questions but Ritchie some of them.*

Out of the blue, the example appears infelicitous.

**Plan for this section**

1. Show the effect of *information structure* on the felicity of (3).
2. Show that the quantifiers in (3) form a contrastive pair.
3. Show the role of the *strength* of the items in (3).

## 2.1 Information Structure

The notions of *Focus* and *Contrastive Topic* are based on those found in [Büring, 2003].

**Claims**

- Weaker items on the right are infelicitous when they are *informational foci*.

- Weaker items as *contrastive topics* or in *all-focus* utterances are felicitous in any order.

**Tools**

- Information Structure can be forced by an overt question.
- Prosodic information can indicate Information Structure (but is not very efficient in our examples).
- Clefts can also identify Informational Focus.

**Scalar Items in Focus**

(4) À combien de questions ont respectivement répondu Lemmy et Ritchie?
*How many questions did Lemmy and Ritchie answer each?*

a. #[Lemmy]$_{CT}$ a répondu à [toutes les questions]$_F$ mais [Ritchie]$_{CT}$ à [quelques-unes]$_F$.
*Lemmy answered all the questions but Ritchie some of them.*

**Scalar Items in Contrastive Topics**

(5) Qui a répondu à toutes les questions et qui a répondu à quelques-unes?
*Who answered all the questions and who answered some of them?*

a. [Lemmy]$_F$ a répondu à [toutes les questions]$_{CT}$ mais [Ritchie]$_F$ à [quelques-unes]$_{CT}$.
*Lemmy answered all the questions but Ritchie some of them*

**Clefts**

(6) C'est [Lemmy]$_F$ qui a répondu à [toutes les questions]$_{CT}$ mais c'est [Ritchie]$_F$ qui a répondu à [quelques-unes]$_{CT}$.
*It's Lemmy who answered all the questions but it's Ritchie who answered some of them*

**All-Focus**

(7) Dis-moi qui s'en est bien sorti à l'examen?
*Tell me who fared well on the test?*

a. [Lemmy a répondu à toutes les questions]$_F$ mais [Ritchie à quelques-unes aussi]$_F$.
*Lemmy answered all the questions but Ritchie some of them too*

- *Too* facilitates the interpretation of (7-a) (and is predicted to be obligatory in some accounts, cf. [Amsili and Beyssade, 2009]).
- In non all-focussed examples the additive has no effect on the felicity:

  (8) #[Lemmy]$_{CT}$ a répondu à [toutes les questions]$_F$ mais [Ritchie]$_{CT}$ à [quelques-unes]$_F$ aussi.
  *Lemmy answered all the questions but Ritchie some of them too*
  =(4-a)+*aussi/too*

## 2.2 Contrasting Quantifiers

**The structure of (4-a)**
Example (4-a) features two pairs

1. ⟨*Lemmy, Ritchie*⟩
2. ⟨*All the questions, Some of the questions* ⟩

The infelicity of (4-a) could stem from the impossibility to contrast the quantifiers *all* and *some*.

**But...**

1. Cross-linguistic data and the use of *and* do not support this hypothesis.
2. It should be possible to contrast them via exhaustification.

**Cross-linguistic data**

- Some languages have conjunctions whose semantics closely match semantic opposition (Russian *a*, Romanian *iar...*)

  (9) Lui Ion îi place fotbalul, iar Mariei baschetul.
  *John likes football, IAR Mary basketball*

- In particular, in the conjuncts it connects, the Romanian *iar*:
  - requires two different pairs of constituents:

    (10) *Inelul e frumos iar scump.
    *The ring is nice iar expensive*

  - does not allow non-contrastive elements in one pair:

    (11) #Paul a mâncat un măr, iar Petre un fruct.
    *Paul ate an apple, iar Peter a fruit*

**Romanian**

- Quantifiers can be contrasted with *iar*:

  (12) Paul a răspuns la toate întrebările, iar Petre la câteva.
  *Paul answered all the questions, iar Peter some of them*

**The case of *Et/And***

- With *Et/And* the example is felicitous.

  (13) À combien de questions ont répondu Lemmy et Ritchie?
  *How many questions did Lemmy and Ritchie answer each?*
  a. [Lemmy]$_{CT}$ a répondu à [toutes les questions]$_F$ et [Ritchie]$_{CT}$ à [quelques-unes]$_F$.
  *Lemmy answered all the questions and Ritchie some of them.*

- The felicitousness of (13-a) is a further indication that *some* and *all* can be contrasted.

**Exhaustification**

*Exhaustification* is often assumed to be the mechanism yielding scalar inferences (e.g. [Groenendijk and Stokhof, 1984], [van Rooij and Schulz, 2004], [Chierchia et al., 2008]...), e.g. that allows *some of the questions* to be interpreted as *some of, but not all, the questions*.

**Claim**

- To form a contrastive pair with *all*, *some* must be exhaustified.
  - In (12) and (13-a) the judgements about the exhaustive implicature are very strong.
  - If *some* is exhaustified there is no entailment relation linking it with *all* (and the two form a good contrastor pair, cf. [Zeevat, 2004])
- $\Rightarrow$ maybe *some* cannot be exhaustified in (4-a), i.e. *Mais/But* blocks exhaustification on its right conjunct?

**But...**

- An exhaustive interpretation of *most* is accessible in (14)

  (14) Lemmy a répondu à quelques questions, mais Ritchie à la plupart.
  *Lemmy answered some questions, but Ritchie most of them.*

- Supposing an exhaustification block on the right conjunct is rather *ad-hoc* in the absence of other arguments for this hypothesis.
- Intuitively, *but* is a cue for contrast and should facilitate exhaustification.

**Conclusion**
Exhaustification of the weak quantifier is not the issue.

**Strength of the Contrasted Items**

**Order**

- Switching the conjuncts of (4-a) yields an acceptable utterance:

  (15) Lemmy a répondu à quelques questions mais Ritchie à toutes les questions.
  *Lemmy answered some of the questions but Ritchie all of them*

- (15) and (4-a) have the structure of *semantic opposition*, yet are not equivalent ⇒ even semantic opposition is asymmetrical

**Strength**

- *some* and *all* are often described as belonging to the same *scale*, be it entailment based (e.g. [Horn, 1989]) or relevance based (e.g. [Merin, 1999], [van Rooij, 2004])
  - scale examples: ⟨*All, most, some, a bit*⟩, ⟨*None, few, not all*⟩.
- (15) shows that the focus of the right conjunct can be stronger than the focus in the left and (4-a) showed it cannot be weaker
- the right focus can also belong to the negated scale of the left focus, but only if it is stronger than the negation of the latter

  (16) a. Lemmy answered some of the questions but Ritchie none of them
  b. #Lemmy answered some of the questions but Ritchie not all of them

## 2.3 Summary

**Properties of *mais/but***

- it is sensitive to information structure
- there are asymmetrical "semantic opposition" cases

- a scalar item in the focus of the second conjunct must be stronger or opposed to its counterpart in the first conjunct
  - it's not a contrastability issue
  - it's not an exhaustification issue

# 3 Proposition

## 3.1 Formalization

**Theoretical Bases**

- [Umbach, 2005]'s analysis of *but*
- [Anscombre and Ducrot, 1977]'s argumentative approach
- Both theories have merits and flaws ⇒ we'll take the best of both worlds

Notations for this section:

- $F$: informational focus
- $CT$: contrastive topic
- $BG$: background (the part of the utterance to which the focus applies)
- $R$: background minus the contrastive topic

**[Umbach, 2005]**

The meaning of $\langle\langle CT_1, R_1\rangle, F_1\rangle$ `but` $\langle\langle CT_2, R_2\rangle, F_2\rangle$ is:

**Assertion:** $((R_1)CT_1)F_1$ and $((R_2)CT_2)F_2$

**Denial condition (implicature):** $\neg((CT_2)R_1)F_1$

Example:

- [John]$_{CT}$ [cleaned up the room]$_F$, but [BILL]$_{CT}$ [did the dishes]$_F$
- *Denial Condition:* Bill did not clean the room.

**Wrong Predictions of the Denial Condition**

- (17) #[Lemmy]$_{CT}$ answered [all the questions]$_F$ but [Ritchie]$_{CT}$ [some of them]$_F$. =(4-a)

  $\rightsquigarrow \neg$(*Ritchie answered all the questions*): no clash predicted, the implicature is consistent with $q$.

- (18) [Lemmy]$_{CT}$ answered [some of the questions]$_F$ but [Ritchie]$_{CT}$ [all of them]$_F$. =(5-a)

  $\rightsquigarrow \neg$(*Ritchie answered some of the questions*): clash predicted with $q$, the second conjunct.

**[Anscombre and Ducrot, 1977], [Merin, 1999]**

The meaning of $p$ `but` $q$ is:

**Assertion:** $p$ and $q$

**Orientation condition:** $p$ and $q$ must have opposite argumentative orientation: $r_H(q) < 0 < r_H(p)$

**Strength condition:** $r_H(p \wedge q) < 0$, i.e. the conjunction as a whole must argue in the same direction as $q$ (roughly: $q$ "wins" the argument)

$r_H(p)$ designates the relevance of the proposition $p$ to an argumentative goal $H$. $p$ is positively relevant to $H$ iff. asserting $p$ raises the probability of $H$. It can be defined in various ways (cf. [Merin, 1999], [van Rooij, 2004]).

**Wrong Predictions**

- Since information structure is not taken into account no differences between the different IS configurations are predicted.
- The strength condition is dubious in "semantic opposition"
- The strength condition is contradictory with the orientation condition in some cases (cf. [van Rooij, 2004] if $p \vDash q$)

**What's needed**

- Keep the sensitivity to information structure, without the faulty inferences
- Keep an argumentative framework because it accounts for concessive readings and the link with world-knowledge
- Keep an asymmetric constraint similar to the strength condition, because the orientation condition is symmetric (and strength is also assumed in numerous works, e.g. [Jasinkaja and Zeevat, 2009])
- **Solution:** reformulate the strength constraint by including the observations about weak items in focus

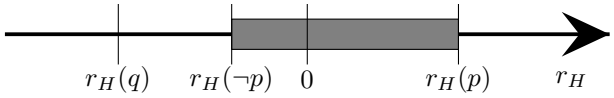
**Proposal**

The meaning of $\langle BG_1, F_1 \rangle$ `but` $\langle BG_2, F_2 \rangle$ is:

**Assertion:** $p = (BG_1)F_1$ and $q = (BG_2)F_2$

**Orientation Condition:** $p$ and $q$ must have opposite argumentative orientation: $r_H(q) < 0 < r_H(p)$

**New Strength Condition:** the proposition obtained by substituting foci in the first conjunct must be stronger than $p$ or than $\neg p$ (out of the gray zone):




- let $q' = (BG_1)F_2$
- then $r_H(q') \notin ]r_H(\neg p), r_H(p)]$

## 3.2 Testing some examples

### Agrammaticality

(19) À combien de questions ont respectivement répondu Lemmy et Ritchie?
*How many questions did Lemmy and Ritchie answer each?*

a. #[Lemmy]$_{CT}$ a répondu à [toutes les questions]$_F$ mais [Ritchie]$_{CT}$ à [quelques-unes]$_F$.
*Lemmy answered all the questions but Ritchie some of them.*=(4-a)

- $p$ =*Lemmy answered all the questions*
- $q'$ =*Lemmy answered some of the questions*
- Usually, $\langle$*all,some*$\rangle$ form a scale, i.e. $r_H(q') \in [0, r_H(p)]$
- $\rightsquigarrow$ agrammaticality predicted

### Switched Conjuncts

(20) Qui a répondu à toutes les questions et qui a répondu à quelques-unes?
*Who answered all the questions and who answered some of them?*

a. [Lemmy]$_F$ a répondu à [toutes les questions]$_{CT}$ mais [Ritchie]$_F$ à [quelques-unes]$_{CT}$.
*Lemmy answered all the questions but Ritchie some of them*=(5-a)

- $p$ =*Lemmy answered some of the questions*
- $q'$ =*Lemmy answered all the questions*
- Again, usually, $\langle$*all,some*$\rangle$ form a scale, i.e. $r_H(q') > r_H(p)$
- $\rightsquigarrow$ utterance predicted to be felicitous

**Non-scalar items**

(21) [Lemmy]$_{CT}$ joue [de la basse]$_F$ mais [Ritchie]$_{CT}$ [de la guitare]$_F$.
*Lemmy plays the bass but Ritchie the guitar*

- $p$ = *Lemmy plays the bass*
- $q'$ = *Lemmy plays the guitar*
- Speculation:
  - If $r_H(p) < r_H(q')$ the argumentative goal $H$ is akin to *Lemmy's a better musician*
  - If $r_H(q') < r_H(\neg p)$ the argumentative goal $H$ is akin to *Lemmy and Ritchie play the same instrument*

**Argumentative weight of implicatures**

**Claim:** Quantity implicatures do not carry argumentative weight

- Exhaustification yields a meaning similar to an overt restriction operator such as *only* (cf. [Chierchia et al., 2008])
- Yet, *only* is felicitous where naked exhaustification is not:

  (22) Lemmy a répondu à toutes les questions mais Ritchie seulement à quelques-unes.
  *Lemmy answered all the questions but Ritchie only some of them.*

- *Only* switches the argumentative orientation so that (22) satisfies the new strength condition, whereas implicatures cannot do this.

# 4 Summary

I have argued for the following:

1. A unified approach to the semantics of *mais/but* based on
   - *argumentativity*
   - a sensitivity to *information structure*
   - a new definition of the *strength* constraint in adversative conjunctions
2. A separation of implicatures and argumentativity

# References


[Amsili and Beyssade, 2009] Amsili, P. and Beyssade, C. (2009). Obligatory presuppositions in discourse. In Benz, A., Kuehnlein, P., and Sidner, C., editors, *Constraints in Discourse*, volume 2 of *Pragmatics and Beyond new series*. Benjamins Publishers, Amsterdam and Philadelphia.

[Anscombre and Ducrot, 1977] Anscombre, J.-C. and Ducrot, O. (1977). Deux mais en français. *Lingua*, 43:23–40.

[Büring, 2003] Büring, D. (2003). On d-trees, beans, and b-accents. *Linguistics and Philosophy*, 26(5):511–545.

[Chierchia et al., 2008] Chierchia, G., Fox, D., and Spector, B. (2008). The grammatical view of scalar implicatures and the relationship between semantics and pragmatics. In Portner, P., Maienborn, C., and von Heusinger, K., editors, *Handbook of Semantics*. Mouton de Gruyter. (to appear).

[Groenendijk and Stokhof, 1984] Groenendijk, J. and Stokhof, M. (1984). *Studies in the semantics of questions and the pragmatics of answers*. PhD thesis, University of Amsterdam.

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

[Izutsu, 2008] Izutsu, M. N. (2008). Contrast, concessive, and corrective: Toward a comprehensive study of opposition relations. *Journal of Pragmatics*, 40:646–675.

[Jasinkaja and Zeevat, 2009] Jasinkaja, K. and Zeevat, H. (2009). Explaining conjunction systems: Russian, english, german. In *Proceedings of Sinn und Bedeutung 13*, Stuttgart.

[Lakoff, 1971] Lakoff, R. (1971). If's, and's and buts about conjunction. In Fillmore, C. J. and Langendoen, D. T., editors, *Studies in Linguistic Semantics*, pages 114–149. de Gruyter, New York.

[Merin, 1999] Merin, A. (1999). Information, relevance and social decision-making. In Moss, L., Ginzburg, J., and de Rijke, M., editors, *Logic, Language, and computation*, volume 2, pages 179–221. CSLI Publications, Stanford:CA.

[Umbach, 2005] Umbach, C. (2005). Contrast and information structure: A focus-based analysis of but. *Linguistics*, 43(1):207–232.

[van Rooij, 2004] van Rooij, R. (2004). Cooperative versus argumentative communication. *Philosophia Scientia*, 2:195–209.

[van Rooij and Schulz, 2004] van Rooij, R. and Schulz, K. (2004). Exhaustive interpretation of complex sentences. *Journal of Logic, Language and Information*, 13:491–519.

[Zeevat, 2004] Zeevat, H. (2004). Contrastors. *Journal of Semantics*, 21:95–112.