

The Meaning of the French additive *Aussi*: Presupposition and Discourse Similarity

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1 Introduction

Standard Analysis: The meaning of *Too*

- (1)
- a. John came and [**Mary** did too].
 - b. *Assertion/At Hand*: Mary came
 - c. *Presupposition*: Someone different from Mary came

- **Too** *associates* with a constituent of its *host*
- It has **additive** semantics:
 - It **does not change** the assertion of the host sentence
 - It **presupposes** that the host sentence is also true for an *alternative* of the associate
- *Too* is **anaphoric**: the alternative of the associate must be available in the preceding discourse and cannot be accommodated:

(2) Sam is having dinner in New-York tonight (# too).

- When *too* can be used, it is obligatory: [Green, 1968], [Zeevat, 2004]...

(3) John came and **Mary** did #(too).

French '*aussi*'

- *Aussi* is the French equivalent of *too*.

- Our examples were constructed and experimentally tested on *aussi*.
- We assume that *aussi* shares the properties of *too* described above and that our results apply to both items.

Claims

1. There are two necessary conditions to the licensing of *too/aussi*:
 - (a) The presupposition of *too/aussi* must be satisfied by an antecedent in the preceding discourse:
 - The presupposition is constructed with the *at hand* content of its host.
 - The antecedent can be found in any layer of meaning of the left context.
 - (b) The host of *too/aussi* and the antecedent of the presupposition must be *similar* in the discourse
 - A similarity in terms of truth conditions is not sufficient
 - An *argumentative* approach captures the regularities observed.
2. *Too/aussi* is optional when the discourse-similarity is not trivial.

2 The Presupposition of *Too*

Claims of the Section

- The presupposition of *too* is not constructed with presuppositional or implicated material:
 - It can be satisfied by propositions differing from the host of *too* in terms of truth-conditions
 - It cannot be satisfied by propositions only compatible with non-asserted material
- The presupposition of *too* can be bound to any type of conveyed content:
 - Presuppositions
 - Implicatures
 - Logical entailments

2.1 Non-Asserted Material

Presuppositions

- *Target sentence:*
 - (4) Lemmy solved only some of the problems.
- *Assertion:*
 - Lemmy did not solve more than some of the problems. (e.g. [Horn, 1969], [Klinedinst, 2005])
- *Presupposition:*
 - Lemmy solved some of the problems.

Binding the Assertion

- (5) Ritchie didn't solve all the problems. Lemmy only solved some of them too.

Binding the Presupposition

- (6) #Ritchie solved some problems. Lemmy only solved some of them too.

Conventional Implicatures

[Potts, 2005], [Jayez and Tovera, 2008]

- *Target sentences:*
 - (7) a. Ritchie, that idiot, came to the party.
b. Ritchie solved almost all the problems.
- *Assertions:*
 - a Ritchie came to the party.
 - b Ritchie solved a number of problems indiscernible from all of them.
- *Conventional Implicatures:*
 - a Ritchie is an idiot.
 - b Ritchie did not solve all the problems.

Binding the Assertion Alone

- (8) a. Lemmy came to the party, and Ritchie, that idiot, came to the party too.
b. Lemmy solved all the problems, and Ritchie solved almost all of them too.

Binding the Conventional Implicature

- (9) a. #Lemmy is an idiot, and Ritchie, that idiot, came to the party too.
b. #Lemmy didn't solve all the problems, and Ritchie solved almost all of them too.

Conversational Implicatures

- *Target sentence:*

- (10) a. Ritchie solved some of the problems.
b. Ritchie slept with a woman.

- *Assertions:*

- a Ritchie solved at least some of the problems.
b Ritchie slept with a woman (possibly his wife).

- *Conversational Implicatures:*

- a Ritchie didn't solve all the problems.
b The woman was not Ritchie's wife.

Binding the Assertion Alone

- (11) a. Lemmy solved at least some of the problems, and Ritchie solved some of them too.
b. Yesterday, Lemmy slept with his wife Linda. Ritchie slept with a woman too.

2.2 Non-Asserted Antecedents

The presupposition of *too* can be satisfied by any layer of conveyed material in the preceding discourse.

- *Presupposition:*

- (12) Lemmy is proud to be a bass player. Roberto plays bass too. . .

- *Conventional Implicature:*

- (13) Lemmy, that idiot, came to the party. Ritchie is an idiot too...
- *Conversational Implicature:*
- (14) Lemmy's married, but after the party he slept with a woman. Ritchie cheated on his wife too...
- *Logical Entailment:*
- (15) Lemmy plays the bass. Ritchie is a musician too.

Taking Stock

- The presupposition of *too* is based on *at hand* content alone.
- The presupposition of *too* can be satisfied by any type of conveyed content in the left context

Key examples:

- (16) a. Ritchie didn't solve all the problems. Lemmy only solved some of them too. = (5)
- b. Lemmy solved all the problems, and Ritchie solved almost all of them too. = (8-b)

3 Discourse Similarity

Experimental Work

- On-line survey(s) in *French*.
- Subjects were asked to judge the *naturalness* of examples in a given context.
- Naturalness was scored with a slider bar. The actual score is between 0 and 100.
- About twenty participants for each paradigm: non-linguists, non-logicians, all native French speakers.
- All differences between the scores are statistically significant (*p*-values under 5% for the Mann-Whitney/Wilcoxon Rank Sum Test)

3.1 Non-satisfied Presuppositions

Truth-conditionally similar antecedents

- (17) How did Lemmy and Ritchie fare at the math exam?

- a. #Pas très bien. Lemmy a résolu seulement quelques problèmes et Ritchie aussi en a résolu une partie.
Not so well. Lemmy solved only some of the problems and Ritchie solved some of them too.
- b. C'est difficile à dire. Lemmy a résolu seulement quelques problèmes et Ritchie en a résolu une partie.
It's hard to say. Lemmy solved only some of the problems and Ritchie solved some of them.

Sentence	Average Score
(17-a)	36
(17-b)	72

Detailing (17-a)

- Assertion of the second conjunct: *Ritchie solved some of the problems.*
- Presupposition: *Someone different from Ritchie solved some of the problems.*
- Candidate antecedent for the presupposition: *Lemmy solved some of the problems*=a *presupposition* of the first conjunct.
- The antecedent should be available (as seen before).

3.2 Gradiance

Intuition: given a specific discourse topic, *too* can enforce a topic similarity cf. (18).

Football and Modality

- (18) Tonight Marseille and Bordeaux each play a match abroad.
- a. La victoire de Marseille est certaine et celle de Bordeaux aussi est très probable.
The victory of Marseille is certain and that of Bordeaux too is highly likely.
- b. ?La victoire de Marseille est certaine et celle de Bordeaux aussi est probable.
The victory of Marseille is certain and that of Bordeaux too is likely.
- c. #La victoire de Marseille est certaine et celle de Bordeaux aussi est possible.
The victory of Marseille is certain and that of Bordeaux too is possible.

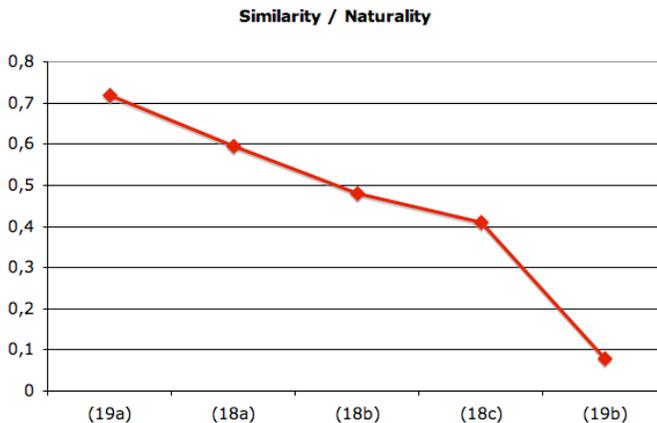
Football and Modality (cont.)

- (19) a. La victoire de Marseille est certaine et Bordeaux aussi est sûr de gagner.
The victory of Marseille is certain and Bordeaux is sure to win too.
- b. #La victoire de Marseille est certaine et Bordeaux aussi a peu de chances de gagner.
The victory of Marseille is certain and Bordeaux has little chance to win too.

Detailing (18-b) with the previous formalization

- Assertion of the second conjunct: *The victory of Bordeaux is likely.*
 - Presupposition: *The victory of a team different from Bordeaux is likely.*
 - Candidate antecedent for the presupposition: *The victory of Marseille is certain* → *The victory of Marseille is likely.*
- All sentences in (18) work the same.
- There should be no difference in acceptability.

Results



3.3 Sensitivity to Argumentation

Claim

An *argumentative* approach (à la [Anscombe and Ducrot, 1983] and [Merin, 1999]) captures the regularities observed for the semantics of *too/aussi*:

- *Argumentation* is quantified and oriented: the argumentative strength of two utterances can be compared.
- *Too* conveys *argumentative similarity* between its host and the presupposition’s antecedent (explains (18)).
- The presupposition cannot be satisfied by an antecedent whose host is *argumentatively opposed* to the host of *too* (explains (17)).

3.3.1 Crash Course in Argumentation Theory

- Some properties of natural language cannot be explained on “logical/truth-conditional” grounds alone:

(20) #It’s almost dark, use only your sidelights.

(21) a. Is the dinner ready?
b. Yes, almost.

- *Intuition*: any utterance *argues* towards a contextually determined conclusion
- An utterance can argue against a given goal even though it implies it: (20)
- An utterance can argue for a goal even though it is logically incompatible with it: (21-b)

Argumentation and Probability

- Argumentation is used as a primitive by Anscombe and Ducrot
- Other authors explicate it by probability: p argues for H iff. asserting p raises the probability of H
- The more $P(H)$ is raised, the stronger p argues for H
- This is captured by a *relevance*¹ function (e.g. [Merin, 1999], [van Rooij, 2004]), noted $r_H(p)$:

¹Note that this notion of relevance is distinct from the one used in Relevance Theory, e.g. in [Wilson and Sperber, 2005].

- $r_H(p) > 0$ means that p argues for H
- $r_H(p) < 0$ means that p argues against H
- $r_H(p) = 0$ means that p is neutral regarding H

Argumentative Items: Orientation and Strength

Some linguistic items have specific argumentative properties:

But connects two argumentatively opposed propositions

Only, Negation revert the orientation of their host

Almost conveys the negation but keeps the orientation of its host.

Quantifiers and Modals usually form argumentative scales : $\langle All, most, some, a bit \rangle$, $\langle Certain, Likely, Possible \rangle$.

There are some attempts to link argumentative properties to truth-conditional ones: cf. [Jayez and Tovena, 2008] on *almost* and [Zeevat, 2009] on *only* (which can be reframed in an argumentative perspective)

3.4 Proposal

- Let U be an utterance with *too*
 - Let S be the host of *too* and F be its associate in S
 - Let C be the antecedent of the presupposition of *too*, and A be the alternative of F in C
 - Let C_{Host} be the linguistic host of C , i.e. the utterance from which C can be inferred.
 - Let $C'_{Host} = C_{Host[F/A]}$, i.e. C_{Host} with F substituting for A
1. *Co-orientation Condition*: $r_H(U)$ and $r_H(C'_{Host})$ must have the same sign
 2. *Strength Similarity Condition*: $r_H(U) = r_H(C'_{Host}) \pm \varepsilon$, the greater the ε , the less felicitous the utterance

3.5 Applications

Enforcing Similarity

(22) La victoire de Marseille est certaine et celle de Bordeaux aussi est très probable.

The victory of Marseille is certain and that of Bordeaux too is highly likely. = (18-a)

- *Assertion:* U = “The victory of Bordeaux is highly likely”
- *Presupposition:* “A team different from Bordeaux is highly likely to win.”
- *Antecedent:* C_{Host} = “The victory of Marseille is certain.” (\rightarrow “The victory of Marseille is highly likely.”)
- *Substituted Proposition:* C'_{Host} = “The victory of Bordeaux is certain”
- *Argumentative Component:* U and C'_{Host} are argumentatively similar regarding the issue of the match.

Switch

(23) #La victoire de Bordeaux est très probable et celle de Marseille aussi est certaine.

The victory of Bordeaux is very likely and that of Marseille too is certain.

- *Assertion:* U = “The victory of Marseille is certain.”
- *Presupposition:* “A team different from Marseille is certain to win.”
- *Antecedent:* none available \rightsquigarrow presupposition failure

Impossible Similarity

(24) #Lemmy solved only some of the problems and Ritchie solved some of them too. = (17-a)

- *Assertion:* U = “Ritchie solved some of the problems.”
- *Presupposition:* “Somebody different from Ritchie solved some of the problems.”
- *Antecedent:* C_{Host} = “Lemmy solved only some of the problems.” (presupposes “Lemmy solved some of the problems.” which should be accessible)
- *Substituted Proposition:* C'_{Host} = “Ritchie only solved some of the problems.”

- *Argumentative Clash*: U and C'_{Host} are argumentatively opposed:
 - C_{Host} argues against “solving some of the problems”= U (effect of *only*)

3.6 Alternative Theories

Local Scalar Implicatures

- The infelicity of (18-c) could be due to the presence of a local scalar implicature (cf. [Chierchia et al., 2008]) that would yield the interpretation (25):

(25) #The victory of Marseille is certain and that of Bordeaux too is possible [but not certain]. =(18-c)+exh
- But what about (17-a)?

(26) #Lemmy solved only some of the problems and Ritchie solved some of them too. =(17-a)
- So, the same kind of implicature should:
 - block the use of *too* in (25).
 - not be available to license its use in (17-a).

This is not a reasonable hypothesis.

Monotonicity

- In (17-a), the quantifiers do not have the same monotonicity on their scopes (cf. [Barwise and Cooper, 1981]).
- \rightsquigarrow Hypothesis: *too* can only link items of identical monotonicity
- But (27-a) and (27-b) are felicitous and involve quantifiers of opposite monotonicities on their restrictions and scopes.

(27) a. Lemmy solved no problems and Ritchie did not solve all of them either.
 b. Lemmy solved only a few problems and Ritchie solved few of them too.
- An hypothesis in terms of monotonicity would not account for gradience anyway.

4 Optionality of *Too*

Too is optional in (28).

(28) Lemmy answered all the questions and Ritchie most of them too.

Plan for this Section

- Demonstrate that recent accounts of *too* predict its obligatoriness in (28).
- Argue that, in (28), *too* is optional because of the *argumentative* component of *too*.

Recent Approaches

[Amsili and Beyssade, 2009], [Percus, 2006], [Sauerland, 2008]

Predictions for (28):

1. $p = \text{“Lemmy answered all the questions”} \rightarrow p' = \text{“Lemmy answered most questions”}$
2. $q = \text{“Ritchie answered most questions”}$
3. $s = \text{“Someone different from Ritchie answered most questions”}$
4. $q' = \text{“Ritchie answered most questions too”}$ is an alternative to q (*too* belongs to the class of items without asserted content)
5. The assertion of $q \rightsquigarrow \neg s = \text{“Nobody except Ritchie answered most questions”}$ (an *antipresupposition* due to the alternative)
6. p' is true and contradicts $\neg s$, therefore *too* is (wrongly) predicted to be obligatory in (28)

Obligatory *Too*

- (29)
- a. #Mary came and John did.
 - b. Mary came, and John did too.
 - c. Nobody apart from John came.
- *Previous explanation:*
 - sentence (29-b) is an alternative to (29-a)
 - asserting (29-a) conveys the (non-consistent) proposition (29-c)
 - *Tentative Adjustment:* Add an argumentative check
 - An antecedent clashes with an antipresupposition (and thus triggers *too*) only if it obeys the argumentative conditions
 - In (29-b) these conditions are trivially met: *too* is **obligatory**
 - In (28) argumentative similarity is up to the speaker: *too* is **optional**

5 Conclusions

Summary

I have argued for the following:

- The presupposition of *too* is built exclusively with the asserted content of its host
- This presupposition can be satisfied by an antecedent conveyed in any layer of meaning in the preceding discourse
- *Too* conveys the (discursive) similarity between its presupposition's antecedent and its host
- The obligatoriness of *too* depends upon the argumentative similarity of the items: if it is trivial then *too* is obligatory, as predicted by many accounts.

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