Emphatic *any*, discourse relations, and probability

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1 Emphatic uses of *any*

Key example

(1) a. I was lost all alone in the middle of a desert I was lucky that I got any help (at all)!
b. I was lost all alone in the middle of a desert I was lucky that I got some help!

- Both (1-a) and (1-b) are felicitous, albeit with different interpretations.
- In (1-a) the use of *any* is *emphatic*.
  - *Any* bears prosodic stress.
  - and/or is used in combination with *at all*,
  - does not seem to be syntactically licensed/required.

(2) a. I was lost all alone in the middle of a desert I didn't have any idea where to go.
b. *I was lost all alone in the middle of a desert I didn't have some/an idea where to go.

- The difference between (2-a) and (2-b) is grammatical. Here, we ignore echoic readings of (2-b) where *some idea* refers to a specific idea.
  - *Any* does not necessarily bear stress.
  - The use of *at all* is not necessary, even difficult.
  - *Any* is syntactically licensed, its use is mandatory.

1.1 Discursive effects of emphatic NP/FCI

(3) a. ?I was lost all alone in the middle of a desert I was lucky that I got any help (at all). But the guy was more kind than very helpful.
b. I was lost all alone in the middle of a desert I was lucky that I got some help. But the guy was more kind than very helpful.

- The emphatic use of *any* has an effect on the following discourse segment.
- In (3-b) it appears easier to minimize the received help.

⇒ discourse markers give clues about the discursive effects of *any*.

2 Traditional analysis of NP/FCI

2.1 Kadmon & Landman (1993)

Widening/strengthening

Kadmon & Landman (1993)

- We go back to an analysis à la Kadmon & Landman (1993) in terms of *widening* and *strengthening*.
- Because this analysis has been thought to account for all kinds of uses of *any*, be it an NPI or an FCI.
- But, as already noted by Krifka (1995), this analysis fits especially (or even only) NP/FCI that are used emphatically.

- Negative Polarity Item *any*

(4) A: - Will there be French fries tonight?
B: - No, I don't have [potatoes]$_D$.
A: - Have you just a couple of potatoes that I could fry?
B: - Sorry, I don't have [ANY potatoes]$_{D'}$.

- Free Choice Item *any*

(5) A: - [An owl]$_D$ hunts mice.
B: - A healthy one, that is?
A: - No, [ANY owl]$_{D'}$.

- Where $D \subset D'$ (*widening*)
- and $S_{D'}$ *entails* S_D (*strengthening*)

2.2 Problems

Problems with *strengthening* and *widening*

No *strengthening* between polar questions (van Rooy, 2003)

(6) a. Are John and Mary sick?
b. Is John sick?

- (6-a) $\nrightarrow$ (6-b): a negative answer to (6-a) doesn't answer (6-b).

No *widening* in most cases (Jayez, 2010)

(7) a. Pick [any apple]$_{D'}$ in this basket! (Vendler, 1967)
b. Pick [an apple]$_D$ in this basket!

- Where $D \not\subseteq D'$. Paradoxically, the first occurrence of the term FCI is illustrated by an example where *widening* cannot be applied.

***Reduction of a bias* in favour of a negative answer**

(8) a. Have you been to China? (recently)
b. Have you **ever** been to China? (in your life)

- A speaker uses (8-b) instead of (8-a) when he thinks it is unlikely that his addressee has been to China.
- Using (8-b) instead of (8-a) the speaker enlarges the domain of situations over which ranges the question.
- The speaker reduces the negative bias, or in probabilistic terms, he increases the probability of the positive answer wrt. the probability of the negative one.

Widening **as** *Equity*

- Jayez & Tovena (2007) reinterpret *widening* as *equity* among the alternatives composing the quantificational domain of *any*.
- An NP like *any N* quantifies over a domain where each entity is as likely as the others to satisfy the proposition of there host sentence.
- A speaker who uses (8-a) invites his addressee to a total freedom of choice or in probabilistic terms maximizes for each entity the probability to satisfy the proposition of the host sentence.

3 Probabilistic approaches

3.1 Entropy

- Roughly, the *entropy* over an experiment, e.g. the roll of a dice, increases with the reduction of the differences between the probability of each possible outcome.
- Entropy is *maximal* when all possible outcomes are equally probable, and is *null* when only one outcome is possible.
- In *information theory*, *entropy* is defined as a measure of *uncertainty* or *choice*.

Two reinterpretations of Kadmon & Landman (1993)

- Independently, van Rooy (2003) et Jayez (2010) reinterpret respectively the notions of *strengthening* and *widening* from Kadmon & Landman (1993).
- van Rooy (2003) accounts for *NPIs* while Jayez (2010) accounts for *FCIs*.
- But both of them reinterpret the fundamental proposal of Kadmon & Landman (1993) in a probabilistic framework: the probability of asserting the sentence S is increased with the increase of the average probability of each alternative triggered by the NP/FCI.

Unifying both analysis

- We can extend van Rooy (2003)'s analysis of assertions containing an NPI and Jayez (2010)'s analysis of NP/FCI and then unify both analyses.
- We propose a new analysis of NP/FCI that unify the two accounts by postulating that NP/FCI mark a bias reduction in the conversation, stemming from the equity between the alternatives triggered by the NP/FCI to satisfy the proposition of the host sentence.

Emphasis and discursive effects

- The notions of *widening* and *strengthening* rely on a comparison between a sentence containing an NP of the form *any N* and the same sentence contenaining an NP of the form *a N* or a bare plural.
- Kadmon & Landman (1993)'s analysis, and consequently van Rooy (2003) and Jayez (2010), fit especially those NP/FCI that we qualified as *emphatic*.
- Both probabilistic analyses presented above account only for the use of NP/FCI that are used (even licensed) with particular discursive effects.

3.2 Discourse Relations

Emphatic NP/FCI and discourse markers

- We propose to link probabilistic approaches of NP/FCI and probabilistic approaches of *discourse markers*.
- Our proposal is motivated by:
  1. similarities between the behaviour of NP/FCI and that of discourse markers in terms of *discursive effects*,
  2. similarities of the probabilistic treatments: van Rooy (2003); Jayez (2010) for NP/FCI; Merin (1999); Winterstein (2010) for discourse markers.

Probabilistic interpretation of discourse

Merin (1999); Winterstein (2010): Bayesian probabilistic approach of discourse interpretation.

- An assertion modifies the (subjective) probabilities of other propositions in the epistemic base S of the speaker.
  - With p the asserted content, the probability measure $P_S(.)$ becomes $P_{S\oplus p}(.) = P_S(.|p)$.
- A speech act is oriented towards an argumentative *goal*.
  - p argues for a goal H, iff. the assertion of p raises the probability of H: $P_{S\oplus p}(H) > P_S(H)$.
- The strength of the argumentative bound is measured by a relevance function r:
  - p argues for H iff. $r_H(p) > 0$
  - p is a better argument than p' for H iff. $r_H(p) > r_H(p')$

Argumentative markers

- The semantics of some discourse markers can be treated in argumentative terms:
  - "*A but B*": there must be an H such that
    - $P_{S\oplus A}(H) > P_S(H)$
    - $P_{S\oplus B}(H) < P_S(H)$
  - "*A and B*": A and B must both argue independently in favour of the same goal.
  - "*A so B*": $P_{S\oplus A}(B) > P_S(B)$

- *too* marks the argumentative similarity between its host and the antecedent of its presupposition.
- ...

- Those descriptions interact and predict the discursive effects of the combination of those markers (Winterstein, 2010).

⇒ Does the use of *any* carry such effects?

3.3 Combining both approaches

Emphatic NP/FCI and argumentative effects

(9) a. I'm glad you got us tickets.
b. I'm glad you got us any tickets.

- The use of *any* in (9-b) marks that all tickets have the same probability to satisfy the speaker.
- A priori, the probability of being satisfied was lower than it is after the assertion (bias reduction).
  - Let's consider the propositions T_i ($i \in [1, n]$) related to getting the ticket t_i.
  - $\forall i, j:\ P_{S\oplus T_i}(glad'(t_i)) = P_{S\oplus T_j}(glad'(t_j))$ and $P_{S\oplus T_i}(glad'(t_i)) > P_S(glad'(t_i))$
  - $\Rightarrow \forall i, j:\ r_{glad'(t_i)}(T_i) > 0$ and $r_{glad'(t_j)}(T_j) > 0$

⇒ Getting any ticket *argues* in favour of "I'm glad of my ticket"(among other potential goals...)

Interaction with *but*

(10) a. I'm glad you got us tickets, but they're not front row.
b. #I'm glad you got us any tickets, but they're not front row.

- The conjunct introduced by *but*, must argue against the first.
- "*the tickets are not front row*"argues against the fact that the speaker is glad of his tickets.
  - $r_{glad'(t_{\neg fr})}(T_{\neg fr}) < 0$
- The previous constraint is incompatible with the constraint imposed by *any* (assuming that the goal of the second conjunct is $glad'(t_{\neg fr})$)
- The bare plural in (10-a) does not impose equity between the tickets, therefore it is not contradictory with the conjunct introduced by *but*.

Conclusion

1. Emphatic uses of *any* have observable discursive effects in their combination with other discursive markers.
2. It is possible to combine probabilistic approaches of the elements at play in the key examples: NPI, FCI and discourse markers.
3. The notion of emphatic use can be linked with French *quoi que ce soit* which is used emphatically in nearly all its licensing contexts.

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