Links, Tails and Monotonicity

Stefan Bott

Universitat Pompeu Fabra, Barcelona

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What this talk is about

- The discourse functions of Links and Tails

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- Do Links locate file-cards (Vallduí 1992)?
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- The discourse functions of Links and Tails

- Do Links locate file-cards (Vallduí 1992)?
- Are Links non-monotone anaphora (Hendriks and Dekker 1996)?

- What function do Tails have?

The information partitioning of sentences

- Vallduví's sentence level partition:

Link	Tail	Focus
Background		Focus
Topic	Comment	

Vallduví's classification
Focus-Background
Topic-Comment

The sentence level

Both Catalan and English show clear differences in the realisation of Links, Tails and Foci.

The sentence level

CATALAN

- Links are realised as left dislocated constituents
- Tails are realised as right dislocated constituents
- The focus corresponds to the core clause

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(1) **A: What about the boss? Does he like broccoli?**

B: [L'amo]$_{link}$ [L'ODIA]$_{focus}$ [el bróquil]$_{tail}$
[The boss] $_{link}$ [it-hates]$_{focus}$ [the brocoli]$_{tail}$

The sentence level

ENGLISH

- Links receive a B-Accent (L+H*)
- Tails are unaccented
- Foci are A-accented (H*)

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(2) A: What about the boss? Does he like broccoli?

    B: [The boss]$_{link}$ [HATES]$_{focus}$ [brocoli]$_{tail}$
        L+H*   H*

What's the function of Links and Tails in discourse?

The function of Links & co in discourse is much harder to explain

What's the function of Links and Tails in discourse?

Vallduví:

Operations on file cards of file change semantics:

Links: GOTO a file card

Tails: REPLACE some of the content of a file card

Focus: ADD content to a located file card

What's the function of Links and Tails in discourse?

Vallduví:

Different constellations of Links, Tails and Foci trigger different actions on the file:

For example:

Link-Focus: GOTO(fc)(UPDATE-ADD(Is))

Focus-Tail: UPDATE-REPLACE(Is, RECORD(fc))

The problem

- Vallduví's explanation of the discourse function of Links gives file cards a crucial status

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- Vallduví's explanation of the discourse function of Links gives file cards a crucial status

- File cards are an artefact of file change semantics
- They have no equivalent in other frameworks of discourse representation
- Heim (1982) only gives them a metaphoric status

The problem

- Vallduví's account of the function of Links is highly "platform dependent"

- A transportation from File Change Semantics to some other theory of discourse (e.g. Discourse Representation Theory, DRT) is problematic

Hendriks and Dekker (1996): Arguments against a FCS-solution

- DRT implies less cognitive effort (because no file cards have to be re-ordered)

- Pronouns in weather sentences cannot be located: The pronoun *it* does not correspond to a file card

- Negation, quantification and disjunction are problematic

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- Pronouns in weather sentences cannot be located: The pronoun *it* does not correspond to a file card

(3) It's raining
    problematic

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- Pronouns in weather sentences cannot be located: The pronoun *it* does not correspond to a file card

- Negation, quantification and disjunction are problematic

(4) No/every man walks

Hendriks and Dekker (1996): The proposed alternative

Links are non-monotone anaphora:

"Linkhood (marked by L+H* accent in English) serves to signal non-monotone anaphora."

Hendriks and Dekker (1996): The proposed alternative

Here "monotonic" means "upward monotonic"

(5) John took Mary to Acapulco. They had a lousy time.

           (Kamp and Reyle, 1993)

monotonic anaphora:

(6) a. Our neigbours are extremely nice people.

    b. He is a teacher, she is a housewife.

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Hendriks and Dekker (1996): The proposed alternative

NonMonotone Anaphora Hypothesis (NAH, Hendriks & Dekker 1996):

- Linkhood (marked by L+H* accent in English) serves to signal non-monotone anaphora.

- If an expression is a link, then its discourse referent Y is anaphoric to an antecedent discourse referent X such that $X \not\subseteq Y$.

Hendriks and Dekker (1996): The proposed alternative

- Hendriks and Dekker argue BOTH

  1) against the use of file cards as basic unit in the interpretation of information structure

  AND

  2) against a location function of Links

Questions which Hendriks and Dekker do not adress

1) If Links are anaphora, how can their antecedents be resolved and which factors constrain the anaphoric relationship? How can the relation between a Link and it's antecedent be modelled?

2) If Links are anaphora, what are Tails? Most probably they should be treated as anaphora as well. Are they then monotone anaphora?

A further question

3) Is non-monotonicity really a **necessary** condition for Links?

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- Is non-monotonicity really a necessary condition for Links in all of them?

Cases in which Links are licensed

1: Links are part of a plural individual antecedent

(7) A: Què en saps, dels teus amics?
    What do you know about your friends?

B: [La Maria]$_{link}$,   la   vaig veure fa   poc.
    [ART Maria]$_{link}$, her have-seen ago little.
    Mary, I have seen recently.

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   B: [La Maria]$_{link}$, la vaig veure fa poc.
   [ART Maria]$_{link}$, her have-seen ago little.

The NAH predicts this case, because Maria is part of your friends. Or:

$$X \not\subseteq Y$$

**(X is the referent of my friends,
Y is the referent of Maria)**

Cases in which Links are licensed

2: Links overspecify (are more specific than) their antecedent

(8) A: A Mozart, li agradaven els instruments de corda?
      Did Mozart like string instruments?

   B: [La viola]$_{link}$ segur que   li   agradava.
     [The viola]$_{link}$ surely that DAT he-liked
     The VIOLA, he surely liked.

   (modelled on an example by van Deemter 1992)

(9) B: He surely LOVED **the viola**
            H*   L+H*

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   B: [La viola]$_{link}$ segur que li   agradava.

The NAH predicts this case:

X $\not\subseteq$ Y

 where X = dr(instruments de corda) and Y = dr(viola)

(9)

BUT: We have to stipulate that the kind-refering instruments de corda denotes a set

Cases in which Links are licensed

3: Non-identity anaphora

(10) a. Ten guys were playing basketball in the rain

    b. [The fathers]$_{link}$ were having FUN.

        L+H*   H*

    b' [The fathers]$_{tail}$ were having FUN.

                                  H*

                            (example by Hendriks and Dekker)

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                                      H*

                            (example by Hendriks and Dekker)

The NAH predicts non-identity

Cases in which Links are licensed

4: Links pick up a discourse referent which is not as high in the accessibility ranking as a conflicting alternative antecedent

(11)　A: He vist que el president té una col·lecció de porcellana de Delft. He comprat una nova peça per a la col·lecció. Creus que ha estat bona idea?

I have seen that the president has a collection of Delft china. I bought a new piece for his collection. Do you thing this was a good idea?

B: No.　[El president]$_{link}$　l'odia,　[la　porcellana de　Delft] $_{tail}$.
No.　[The president]$_{link}$ it-hates, [the china　　from Delft]$_{tail}$.

No. The president hates the Delf china set.

Cases in which Links are licensed

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No. [The president]link it-hates, [the china   from Delft]tail.

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The NAH does not predict this case:
X = Y

The NAH would predict that there are two presidents!

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We must conclude that non-monotonicity is not a necessary condition for Links

Links can not signal non-monotonicity (by themselves)!

Cases in which Links are licensed

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  No. [The president]$_{link}$ it-hates, [the china   from Delft]$_{tail}$.

  No. The president hates the Delf china set.

Non-identity must follow from some other property of Links

The revised anaphor hypothesis for Links (partial)

…

If an expression is a link, then its discourse referent
  Y is anaphoric to an antecedent discourse referent
  X such that X ≥ Y.

…

Tails

- If Links stand in an upward part-of (≤) relation to their antecedent, do Tails stand in a downward (≥) relation to their antecedent?

- Are the previous examples reversible?

Tails

(12)   Mozart wrote many pieces for the viola. He
       must have LOVED [string instruments]$_{tail}$

                              (van Deemter, 1993)

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Tails

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(13)   A: What do you know about Mary?

B: I haven't MET [friends]$_{tail}$ recently.

B': I haven't met ANY [friends]$_{tail}$ recently.

Tails

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Tails

(12) Mozart wrote many pieces for the viola. He must have LOVED [string instruments]$_{tail}$

(13) A: What do you know about Mary?

B: I haven't MET [friends]$_{tail}$ recently.

B': I haven't met ANY [friends]$_{tail}$ recently.

Tails can stand at least in a > relation to their antecedent

The limiting case: identity

What about identity between a background
constituent and it's antecedent?

Identity is both covered by $\leq$ and $\geq$

(the condition for Links and Tails, respectively)

The limiting case: identity

TAILS:

(14) A: Saps alguna cosa de l'Enric?

    Do you have any news about Enric?

   B: No en sé res , [de l'Enric]$_{tail}$.
    Not cl I-know nothing , [about art-Enric]$_{tail}$.

    No, I don't know ANYTHING about Enric.

The limiting case: identity

LINKS:

(15)　　A: Saps alguna cosa de l'Enric?

　　　　　Do you have any news about Enric?

　　　　B': a. [De　　l'Enric]$_{link}$　, no en sé　　　res.
　　　　　　　[About art-Enric]$_{link}$, not cl I-know nothing.

　　　　　　I don't know ANYTHING **about Enric**.

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The limiting case: identity

LINKS:

(15)   A: Saps alguna cosa de l'Enric?

         Do you have any news about Enric?

       B': a. [De   l'Enric]$_{link}$, no en sé   res.

          [About art-Enric]$_{link}$, not cl I-know nothing.

          I don't know ANYTHING **about Enric**.

        b. Però la seva germana sí que l'he vist

           But art his sister yes that her-I-have seen

           But I have SEEN **his sister**.

The limiting case: identity

LINKS:

(15)   A: Saps alguna cosa de l'Enric?

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[About art-Enric]$_{link}$, not cl I-know nothing.

I don't know ANYTHING **about Enric**.

b. Però la seva germana sí que l'he vist
But art his sister yes that her-I-have seen

But I have SEEN **his sister**.

Contrastivity!

An Outlook

LINKS:

(15)

x

Both *Enric* and *his sister* have the same antecedent x.

B': a. [De   l'Enric]$_{link}$, no en sé   res.
[About art-Enric]$_{link}$, not cl I-know nothing.
I don't know ANYTHING about Enric.

b. Però la seva germana sí que l'he vist
But art his sister yes that her-I-have seen
But I have SEEN his sister.

An Outlook

LINKS:

(15)

x

Both *Enrik* and *his sister* have the same antecedent x.

x must be inferred:

$x \geq (enric' \& his\_sister')$

B': a. [De   l'Enric]ₗᵢₙ

[About art-Enric

I don't know ANYTHING about Enric.

b. Però la seva germana sí que l'he vist

But art his sister yes that her-I-have seen

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An Outlook

- Are Links anaphoric to their contrastive set?
- Do contrastive sets project their own discourse segment?

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- Do contrastive sets project their own discourse segment?

- Unfortunately there are examples which are neither contrastive nor non-monotone:

(2)   A: What about the boss? Does he like broccoli?
        B: [The boss]$_{link}$ [HATES]$_{focus}$ [brocoli]$_{tail}$
            L+H*   H*

Conclusion

- Links DO NOT locate file cards (although they might locate something else)
- Links DO NOT signal non-monotone anaphora (although they might be non-monotone)
  - Links DO NOT signal necessarily non-identity anaphora

Conclusion

- Links must stand in a ≤ relation to their antecedent

- Tails must stand in a ≥ relation to their antecedent

- Accessibility ranking of antecedents plays a role
  (where "play a role" does not mean to "cause" something)

- Contrastivity effects play a role

Outlook/further work

- How does information partitioning relate to discourse structure?

- Do Links locate the right discourse segment to which the information must be attached?

- Does contrastivity follow from discourse structure?

Outlook/further work

- To be continued ....

Mercí