Syntax-centered and semantics-centered views of discourse. Can they be reconciled?

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February 24, 2011
Outline

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   - Syntax-Centered View of Discourse

2 Attribution: a Discourse-Syntax Mismatch?

3 Resolving the Syntax-Discourse Conflict
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Dependency-Based: All Links Connect Words
Tree(like) Structure
Phrases are Derivable from Dependencies
We **discussed** a book today which was written by Chomsky.
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Discourse Structure Extending Syntax

- Sentences always headed by a word (usually verb)
- Discourse Structure *extends* existing syntactic structure
Two convicted executives of the July 6 Bank appealed\textsubscript{1} their\textsubscript{2} judgment on the spot from the Copenhagen Municipal Court with a demand for acquittal. The prosecuting authority has\textsubscript{3} also reserved the possibility of appeal.

The chairman of the board received\textsubscript{4} a year in jail and a fine of DKK one million for fraudulent abuse of authority [...]. The bank’s director received\textsubscript{5} 6 months in jail and a fine of DKK 90,000.
Discourse Example Graph

Two convicted executives of the July 6 Bank appealed their judgment on the spot from the Copenhagen Municipal Court with a demand for acquittal.

The prosecuting authority has also reserved the possibility of appeal. The chairman of the board received a year in jail and a fine of DKK one million for fraudulent abuse of authority. The bank's director received 6 months in jail and a fine of DKK 90,000.
Discourse Example Graph

...appealed1... their(judgment)2 ...has3... ...received4... ...received5...
The CDT Approach to Syntax and Discourse

- Discourse relations extend a syntax dependency graph
- Hypothesis: when Discourse and Syntax relations overlap, they will be consistent
The current distribution arrangement ends in March 1990, although Delmed said it will continue to provide some supplies of the peritoneal dialysis products to National Medical, the spokeswoman said.
ALTHOUGH
...distribution ends ...
SAID
Delmed
some supplies continue
“... although as a discourse connective denies the expectation that the supply of dialysis products will be discontinued when the distribution arrangement ends. *It does not convey the expectation that Delmed will not say such things.*”

(Dinish et al, 2005)
Contrast Relation

ALTHOUGH

...distribution ends ...

SAID

Delmed

some supplies continue
ALTHOUGH

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Syntax-centered and semantics-centered views of discourse.
The Problem

- What does *Although* relate?
- Syntactically, its argument is “*Delmed said it will continue to provide some supplies...*”
- The Discourse argument is “*it will continue to provide some supplies...*”
Contrast in CDT

Copenhagen Dependency Treebank Annotation Manual

- Direct contrast. A direct contrast relation. The contrast lies between the governing and dependent text segment.
- Subjective contrast. A subjective contrast relation. The contrast lies between an explicit and a subjectively inferred text segment.
Penn Discourse Treebank Annotation Manual

- Type: “Concession” The type “Concession” applies when the connective indicates that one of the arguments describes a situation A which causes C, while the other asserts (or implies) not C. Alternatively, one argument denotes a fact that triggers a set of potential consequences, while the other denies one or more of them.
Contrast and Interpretation

- **Contrast (two cases)**
  - Infer $p(a)$ from the assertion of S0 and not $p(b)$ from the assertion of S1, where $a$ and $b$ are similar
  - Infer $p(a)$ from the assertion of S0 and $p(b)$ from the assertion of S1, where there is some property $q$ such that $q(a)$ and not $q(b)$

Hobbs, Literature and Cognition (p 99)
Contrast and Inference

- Contrast between S0 and S1 involves a contradiction
- But, a discourse must be consistent
- The contradiction in a contrast must always be safely “packaged”
  - Inferences from S0 to p and S1 to not p must be based on different background assumptions, B0 and B1
  - Interpreter must not be committed to B0 and B1, but must be willing to temporarily entertain them
S0: current distribution arrangement ends
S1a: some supplies will continue
S1b: Delmed says some supplies will continue
CASE 1: Contrast(S0,S1a)
CASE 2: Contrast(S0,S1b)
Licensing Contrast: CASE 1

- Contrast(S0,S1a)
- current distribution ends BUT some supplies will continue
- a = b = supplies
- p = \( \lambda P. \exists x. P(x) \) and x will continue
- p(a) \( \exists x. P(x) \) and x will continue (“some supplies will continue”)
- not p(b) not \( \exists x. P(x) \) and x will continue (“no supplies will continue”)
- B0: supplies only come from current distribution arrangement
- B1: <empty>
Licensing Contrast: CASE 1

- BO: supplies only come from current distribution arrangement
- S0: current distribution ends
- p: no supplies continue
- B1: <empty>
- S1a: some supplies will continue
- not p: some supplies continue
Licensing Contrast: CASE 2

- Contrast(S0,S1b)
- current distribution ends BUT Delmed says some supplies will continue
- \( a = b = \text{supplies} \)
- \( p = \lambda \exists x. P(x) \) and \( x \) will continue
- \( p(a) \exists x. P(x) \) and \( x \) will continue ("some supplies will continue")
- not \( p(b) \) not \( \exists x. P(x) \) and \( x \) will continue ("no supplies will continue")
- B0: supplies only come from current distribution arrangement
- B1: \( \forall p. \) if Delmed says \( p \) then \( p \)
Licensing Contrast: CASE 2

- BO: supplies only come from current distribution arrangement
- S0: current distribution ends
- p: no supplies continue
- B1: Delmed speaks truthfully
- S1b: Delmed says some supplies continue
- not p: some supplies continue
Contrast is licensed by two packaging background assumptions – only one is required:

- BO: supplies only come from current distribution arrangement
- B1: Delmed speaks truthfully

Although Delmed says it will continue to provide some supplies of the peritoneal dialysis products to National Medical, no supplies are being sent.

The current distribution arrangement ends in March 1990, although Delmed will continue to provide some supplies of the peritoneal dialysis products to National Medical.
Conclusion

- The contradiction in **Contrast** must always be safely packaged.
- Syntactic embedding of saying verb is one typical way of doing this.
- Attribution Contrast examples support Syntax-centered Discourse Hypothesis.
- Using syntactic structure as a guide helps to better understand the discourse function.