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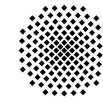Institut für Maschinelle Sprachverarbeitung

Focus, Contrastive Topics and Questions under Discussions

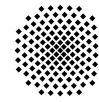## ESSLLI 2014 Annotating Corpora with Information Structure

Kordula De Kuthy and Arndt Riester

January 14, 2015

Overview

- ▶ Questions under Discussion

- ▶ A Top-down Focus Analysis

- ▶ Contrastive Topics

- ▶ Not-at-issue Content

- ▶ Annotating Focus in the Snowden Interview

Focus distinctions so far

- ► Pragmatic focus vs. semantic focus

- ► Broad vs. narrow focus

- ► Contrastive vs. information focus

What is the best way to identity focus in a given utterance?
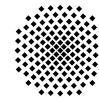
Questions under Discussion

- ► Informative discourse serves to eliminate uncertainty about the state of the world.

- ► With most of what we communicate, we strive to (partially) answer the Big Question *What is the way things are?* (Roberts 2012; Büring 2003)

- ► To that end, we devise a discourse strategy consisting of more specific questions.

- ► In theory, questions remain on the QUD stack until fully answered. (While in practice they may simply fade out.)
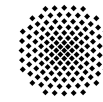
How to be informative

▶ Choose a subquestion to the Big Question.

▶ Answer that one.

▶ Choices:
1. Stay at the same level, get more or get less specific.
2. Settle an issue completely or partially.
3. Keep talking about an issue or leave it at what it is.

▶ A constituent which provides an answer is a focus.

▶ A constituent that signals a strategy to talk about a certain issue (*sortal key*, (Büring 2003)) in several equal steps is called a *contrastive topic*.
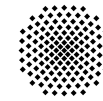
A hierarchical model of discourse structure (Büring 2003)

- How was the concert?
  - Was the sound good?   No, it was awful.
  - How was the audience?   They were enthusiastic.
  - How was the band?
    - How was the drummer?   Just fantastic
    - And what about the singer?   Better than ever.
  - Did they play old songs?   Not a single one.
- What did you do after the concert?

- question
  - sub-question
  - sub-question
  - sub-question
    - subsub-question
    - subsub-question
  - sub-question
- question

Top-down focus analysis with questions

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversations?'

So she was considering in her own mind [...], whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

From: ALICE'S ADVENTURES IN WONDERLAND By Lewis Carroll

Top-down focus analysis with questions - an example

Q1: What was Alice doing?
  Q2: What is Alice beginning to get very tired of?

  A2: ~[*Alice was beginning ot get very tired of* ⟦*sitting by her sister on the bank*⟧$_F$*, and of* ⟦*having nothing to do.*⟧$_F$]

A1: *Once or twice* ~[*she* ⟦*had peeped into the book her sister was reading.* ⟧$_F$]
  Q3: What was the book like?
  A3: *but* ~[*it* ⟦*had no pictures or conversations* ⟧$_F$ *in it.*]
 Q4: What was Alice thinking about the book?
  A4: ⟦*And what ist the use of a book* ⟧$_F$*, thought Alice* ⟦*without pictures or conversations?* ⟧$_F$

Q5: What was Alice doing next?

A5: *So* ~[*she* ⟦*was considering in her own mind [...], whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies*⟧$_F$]

Q6: What happened to her then?

A6: *when suddenly* ~[⟦*a White Rabbit with pink eyes ran close* ⟧$_F$ *by her.*]
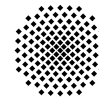
Contrastive Topics

(1) A: What about Fred? What did he eat?
     B: FRED ate the BEANS.
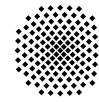
Q1: (*Who ate what?*)

   Q2a: What did Fred eat?
   A2a: FRED$_{CT}$ ate the BEANS$_F$.

   Q2b: *What did Mary eat?*

   Q2c: *What did ... eat?*

Implicit Moves
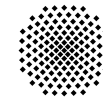
(2) A: What did the pop stars wear?
     B: The FEMALE$_{CT}$ pop stars wore CAFTANS$_F$.

Q1: What did the pop stars wear?
  Q2a: *(What did the female pop stars wear?)*

  A2a: The FEMALE$_{CT}$ pop stars wore CAFTANS$_F$.

  Q2b: *(What did the male pop stars wear?)*

Resolving Questions under Discussion

▶ An (explicit or implicit) question is under discussion until it has been answered or *resolved*.

▶ Felicitous conversational moves constitute attempts to resolve the current QUD.

▶ An utterance which constitutes such an attempt *addresses* the QUD.

Relevance and At-issueness (Simons et al. 2011)

Relevance to the QUD:

► An assertion is relevant to a QUD iff it contextually entails a partial or complete answer to the QUD.

Definition of at-issueness:

► A proposition p is **at-issue** relative to a question Q iff ?p is relevant to Q.
(where ?p denoted the question whether p, i.e. the partition on the set of worlds with members p and $\neg$ p)

(3) *Context:* Carlos' pocket was picked at the party he is attending with Mario.

Carlos: Who stole my money?

Mario: That man, my mother's friend, stole your money.
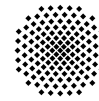
Not-at issue content

Conventional implicatures (Potts (2005)):

- ▶ supplemental expressions (appositives, parentheticals) and expressives (e.g., epithets)
    - ▶ that represent optional information from the perspective of truth-conditional semantics.

- ▶ Conventional implicature expressions are used to guide the discourse in a particular direction

- ▶ or to help the hearer to better understand why the at-issue content is important at that stage.
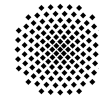
Conventional Implicatures: Some Examples

Supplements:

- ▸ Non-restrictive modifiers:

    (4) I spent part of every summer until I was ten with my grand mother, *who lived in a working-class suburb of Boston*.

- ▸ Parentheticals:

    (5) Ames was, *as the press reported*, a successful spy.

- ▸ Topic-oriented adverbs

    (6) *Cleverly / Wisely*, Beck started his descent.

- ▸ Speaker-oriented adverbs

    (7) *Unfortunately / Luckily*, Beck survived the descent.

Expressives:

(8) I have to mow the *damn* lawn.

Not-at-issue Content: Evidentials

▶ Sometimes, the embedded clause of an utterance provides the at-issue content,

▶ while the main clause predicate provides non-at-issue content, functioning as an evidential (cf. Simons 2007).

(9) A: Who was Loise with last night?

    B: i. She was with Bill.

        ii. *Henry thinks that* she was with Bill.
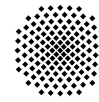
       iii. *I believe that* she was with Bill.

       iv. *Henry said that* she was with Bill.

        v. *I suppose that* she was with Bill.

       vi. Louise was with Bill, *I believe/suppose/guess.*

      vii. Louise, *Henry said,* was with Bill.
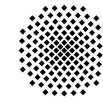
An Annotation Procedure for Focus and QUDs

Goal:

▶ Turn a text (or transcript of spoken dialogue/monologue) into a discourse tree.

  ▶ Each node in the tree represents the current QUD at that position.

  ▶ Terminal nodes represent answers to their respective QUD.

  ▶ The root node represents the general QUD (the "discourse topic", in the form of a question).
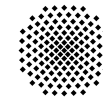
The Annotation Procedure

▶ Read the text carefully, and make sure you understand what it is about and whether it makes sense.

▶ Split sentences into clauses, in particular at sentence level conjunctions and subjunctions, but do not separate sentential complements from their embedding matrix verbs.

▶ Mark conventional implicatures (not-at-issue content) , i.e. constituents that represent optional information from the perspective of truth-conditional semantics.

▶ Conventional implicature content can be ignored during the inital discourse-structure analysis.
(CI content has its own information structure. Since it is usually new information, it should probably be analysed as a separate focus.)

Building a discourse tree:

- ► Throughout the text, try to group as many clauses (assertions) as possible under a common question.

- ► Insert the implicit QUD above the clauses.

- ► The assertions then represent a series of partial answers to the QUD.

- ► In the tree, these partial answers are sibling nodes.

   1. Parallelism: there are at least two partial answers which have the form of a "checklist" (contrastive topic – focus structures)
   2. Answers to an aboutness question: there are at least two assertions that predicate over the same element.

Q0: *What about Snowden?*

   Q1: *What is Snowden's role in the discussion?*

   A1: ~[[You]$_T$ [started]$_F$ this debate],

   Q2: *What is his current status?*

   A2: ~[[Edward Snowden]$_T$ [is [in the meantime]$_{nai}$ [a household name for the whistleblower in the age of the internet]$_F$.]

   Q3: *What did he do before?*

   A3: ~[[You]$_T$ [were working [until last summer]$_{nai}$ for the NSA]$_F$]
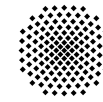
   Q4: *What happenen there?*
   A4: and ~[[during this time]$_{nai}$ [you]$_T$ [collected [secretly]$_{nai}$ thousands of confidential documents]$_F$.]

   Q5a: What was the decisive moment
   Q5b: or was there a long period of time
   Q5c: or something happening
   Q5d: why did you do this?

Question 6: Snowden's Answer

A5a': [I would say]*nai* ~[[sort of the breaking point]*T* [is seeing the Dirctor of National Intelligence, [James Clapper]*nai* , directly lie under oath to Congress]*F*].

Q6: *What does that say about our intelligence community?*

A6: [There's no saving]*nai* ~[(*We have got*) an intelligence community that believes it can lie to [the public and the legislators [who need to be able to ~[[trust]*F* it] and ~[[regulate]*F* its [actions]*F*]]*nai*]*F*]

Q7: *What did Snowden realize?*

A7: [Seeing that really meant for me]*nai* [there was no going back]*F*

A5a": [Beyond that,]*nai* ~[[it]*T* was the creeping realisation that no one else was going to do]*F* this *(collecting confidential documents, going public etc.)*].
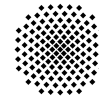
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