Structured Contexts 2: Topic

Julian J. Schlöder

Formal Pragmatics, Lecture 2, Jan 12th

Non Sequitur

- Many utterances are perfectly fine on their own, but sound rather odd when considered in context.

  → Call this *off topic*, *incoherent* or *non sequitur*.

(1)	a. A: How was your weekend? #b. B: I like cheese!

(2)	#a. A man is on a train to Istanbul. He likes salmon. a. A man is on a train to Istanbul. He has family there.

Non Sequitur

- Many utterances are perfectly fine on their own, but sound rather odd when considered in context.

  → Call this *off topic*, *incoherent* or *non sequitur*.

(1)	a. A: How was your weekend?
	#b. B: I like cheese!

(2)	#a. A man is on a train to Istanbul. He likes salmon.
	a. A man is on a train to Istanbul. He has family there.

(3)	"You should learn not to make personal remarks," Alice said with some severity. "It's very rude." The Hatter opened his eyes very wide on hearing this; but all he said was, "Why is a raven like a writing-desk?"

(4)	#a. Time flies like an arrow. But fruit flies like apples.

Intonation / Focus

– Intonation seems to have something to do with it.

(5)   a. A: Who likes Caroline?
       b. B: BEATRICE likes Caroline.
   #b.′ B: Beatrice likes CAROLINE.

(6)   a. A: Does Amelia like Caroline?
       b. B: (No,) BEATRICE likes Caroline.
     b.′ B: (Yes,) Amelia likes Caroline.
  #b.″ B: Beatrice likes CAROLINE.

Question-Under-Discussion

Topic as QUD (Roberts 1996/2012)

– A simple idea is to keep track of the current topic as expressed by the present question under discussion (QUD).

– An utterance is on topic if it contributes to the QUD.

  → The nature of this 'contribution' is not easy to specify.

– Focus (prosodic or syntactic) signals which QUD is presupposed.

  → Replace the focal element with an appropriate *wh*-element.

  → Call this the congruent question (Halliday, 1967).

– Both overanswering the QUD and underanswering it seems to be okay.

(7)   a. A: Does anybody like Caroline?
       b. B: Beatrice likes Caroline.

(8)   a. A: What's everyone's opinion of Caroline?
       b. B: Beatrice LIKES Caroline.

– You can also follow up questions with further questions.

> (9) a. A: Does anybody like Caroline?
> b. B: Does BEATRICE like him?

> (10) a. A: How many people for dinner?
> b. B: Is Beatrice bringing someone?

– All this follows the "contributes to QUD" intuition.

Roberts's Defintions

---

q-alt

Let *D* be the contextually available/salient discourse referents.
Given an utterance *u* that contains *n* (possibly $n = 0$) *wh*-elements,
let the syn-sem interface compute a logical form where all *wh*-elements have been λ-abstracted:

$$\llbracket u \rrbracket = \lambda x_1, ..., \lambda x_n.\varphi$$

Then, the question-alternatives of *u* are:

$$q\text{-}alt(u) = \{\llbracket u \rrbracket(\bar{d}) \mid \bar{d} \in D^n\}.$$

I.e. all potential instantiations of the abstraction with referents.

– Polar interrogatives and indicatives have the same q-alt.
  - $\rightarrow$ This is mostly for yes/no semantics.
  - $\rightarrow$ Let's ignore *why* and *how* questions for now.

Complete and Partial Answers

– The semantic denotation of a question Q is *q-alt*(Q).

   $\rightarrow$ Thus, QUDs are sets of alternatives.

– A complete answer to Q decides all propositions in *q-alt*(Q).

– A partial answer to Q decides one proposition in *q-alt*(Q).

Contribute to QUD

– An assertion *A* contributes to answering a question *Q* iff *A* (contextually) entails a partial answer to *Q*.

– For two questions Q_1, Q_2, write $Q_1 < Q_2$ iff every complete answer to Q_2 contextually entails a partial answer to Q_1.

– Q_2 contributes to answering Q_1 iff $Q_1 < Q_2$.
   → $\approx Q_2$ is part of a strategy of inquiry to resolve Q_1.

Discourse Update

– As before, QUD is a stack in a structured context.

– Updating the context with a question Q is to put Q on top of QUD.

> **Coherence**
>
> A QUD stack is coherent iff for all Q, Q' on the stack where Q is below Q', $Q < Q'$.

– That is, a new question is coherent (can coherently be put on QUD) iff it contributes to the current QUD.

Focus Alternatives

– Common assumption: every indicative has at least one focus.

f-alt

Let D be the contextually available/salient discourse referents. Given an utterance u that contains $n > 1$ focal elements, let the syn-sem interface compute a logical form where all focal elements have been λ-abstracted:

$$[u] = \lambda x_1, ..., \lambda x_n.\varphi$$

Then, the focus-alternatives of u are:

$$f\text{-}alt(u) = \{[u](\bar{d}) \mid \bar{d} \in D^n\}.$$

I.e. all potential instantiations of the abstraction with referents.

Congruence, formally

– An assertion A is congruent to a question Q iff
$\textit{f-alt}(A) = \textit{q-alt}(Q)$.

> Congruence Presupposition
>
> An assertion A pragmatically presupposes that a congruent Q is QUD.

– This presupposition can be accommodated.

– So an assertion is coherent if its congruent question contributes to MaxQUD.

– Let's apply this. Let $D = \{a, b, c\}$.

(11)   a. A: Who likes Caroline?
            $q\text{-}alt = \{\texttt{like}(a, c), \texttt{like}(b, c), \texttt{like}(c, c)\}$.
       b. B: BEATRICE likes Caroline.
            $f\text{-}alt = \{\texttt{like}(a, c), \texttt{like}(b, c), \texttt{like}(c, c)\}$.

(12)   a. A: Does anybody like Caroline?
            $q\text{-}alt = \{\exists x.\texttt{like}(x, c)\}$.
       b. B: BEATRICE likes Caroline.
            $f\text{-}alt = \{\texttt{like}(a, c), \texttt{like}(b, c), \texttt{like}(c, c)\}$.

Applications 2

(13) a. A: What's everyone's opinion of Caroline?
   $\approx$ Who thinks what of Caroline?
   q-alt $= \{\texttt{like}(a,c), \texttt{like}(b,c), \texttt{like}(c,c),$
   $\neg\texttt{like}(a,c), \neg\texttt{like}(b,c), \neg\texttt{like}(c,c)\}$.

   b. B: BEATRICE likes Caroline.
   f-alt $= \{\texttt{like}(a,c), \texttt{like}(b,c), \texttt{like}(c,c)\}$.

(14) a. A: Does Amelia like Caroline?
   q-alt $= \{\texttt{like}(a,c)\}$

   b. B: BEATRICE likes Caroline.
   f-alt $= \{\texttt{like}(a,c), \texttt{like}(b,c), \texttt{like}(c,c)\}$.

– Recall: a complete answer decides all propositions in q-alt.

Problems

- However:

(15) a. A: Who likes Caroline?
    $q\text{-}alt = \{\texttt{like}(a, c), \texttt{like}(b, c), \texttt{like}(c, c)\}$.
  #b. B: Beatrice likes CAROLINE.
    $f\text{-}alt = \{\texttt{like}(b, a), \texttt{like}(b, b), \texttt{like}(b, c)\}$.

- This is predicted as coherent!

- (I think this can be fixed by fixing the question semantics.)

(16)   a. A: Does Amelia like Caroline?

b. B: BE^ATRI^{CE} likes Caroline.

#b. B: BE^ATRI^{CE} likes Caroline.

---

(17)   a. A: Who likes Caroline?

#b. A: Beatrice likes CA^{RO}LI^{NE}.

#b.′ A: Beatrice likes CA^{RO}LI^{NE}.

A Counterexample to Congruence

– Roberts says that (18b) is good, but (18b′) is bad.

> (18)   a. A: Who likes Caroline?
>   b. A: NOBODY likes Caroline.
>   #b.′ A: Nobody likes CAROLINE.

– But (19b′) sounds okay.

> (19)   a. A: Who likes Caroline?
>
>   #b. A: Nobody likes CA^{RO}LI_{NE}.
>
>   b.′ A: Nobody likes CA^{RO}LI^{NE}.

(20) #a. A man is on a train to Istanbul. He likes salmon.
     a. A man is on a train to Istanbul. He has family there.

– The point here seems to be that the second sentence
explains the first.

– 'Being on topic' isn't really the issue.

Question-Under-Discussion

Micro-Rhetorics

Micro-Rhetorics

Why Questions

- We have a good idea of how to understand questions in terms of their answer space.
  - → Polar questions, most Wh-questions (Who, When, Where,...), Clarification Questions, ...

– We have a good idea of how to understand questions in terms of their answer space.

→ Polar questions, most Wh-questions (Who, When, Where,. . .), Clarification Questions, . . .

– Not so much for *Why?*

→ What is the space of permissible answers, and how can we compute it?

Why Questions

- We have a good idea of how to understand questions in terms of their answer space.
  - → Polar questions, most Wh-questions (Who, When, Where,...), Clarification Questions, ...

- Not so much for *Why?*
  - → What is the space of permissible answers, and how can we compute it?

- Dialogue frequently involves giving reasons.
  - → Backing up assertions.
  - → Relevant speech acts are made for reasons.

Examples

(21) a. B: He's in hospital.
      b. C: Why?
      c. B: Because he's not very well (BNC, file KBF, lines 3394–3396)

(22) a. G: Do you want mum to come to Argos with me tomor-
            row morning?
      b. R: Why are you asking me?
      c. G: Cos you said you'd come to Argos with me.
                                        (BNC, file KC8, lines 191–196)

Examples

(21) a. B: He's in hospital.
b. C: Why?
c. B: Because he's not very well (BNC, file KBF, lines 3394–3396)

(22) a. G: Do you want mum to come to Argos with me tomor-
row morning?
b. R: Why are you asking me?
c. G: Cos you said you'd come to Argos with me.

(BNC, file KC8, lines 191–196)

– But not every answer is okay here.

Enthymemes

- Ellen Breitholtz proposes that dialogue contains many enthymemes.

- A syllogism consists of a major premiss, a minor premiss and a conclusion.
- An enthymeme consists of a minor premiss and a conclusion.

- Enthymemes are licensed by 'generally accepted as valid' (not necessarily logical) patterns of reasoning.
  - → Aristotle calls these topoi.

Ducrot, O. (1980). *Les échelles argumentatives*.

Jackson, S. & Jacobs, S. (1980). Structure of conversational argument: Pragmatic bases for the enthymeme. *Quarterly Journal of Speech*

Anscombre, J.C. (1995). La théorie des topoi: Sémantique ou rhétorique?. *Hermés La Revue*.

Breitholtz, E. (2014). *Enthymemes in Dialogue*.

Rhetorical Resources

- A topos roughly says something like "when *A*, then usually also *B*".

- Let's call the set of topoi a speaker has available their rhetorical resources.

- Rhetorical resources are part of common ground.

- But one can also argue about what is a valid topos, and whether it applies in the present circumstances.

Reasons

- Answering *q* to 'Why *p*?' indicates that *q* is a reason for *p*.

- Say that *q* is a reason iff there is a valid enthymeme *q* ∴ *p*.

- That is, is a topos licensing *q* ∴ *p*.

Reasons

- Answering *q* to 'Why *p*?' indicates that *q* is a reason for *p*.

- Say that *q* is a reason iff there is a valid enthymeme *q* ∴ *p*.

- That is, is a topos licensing *q* ∴ *p*.

- Thus, answering *q* to 'Why *p*?' presupposes that there is such a topos.

- Topoi can be tacitly assumed, explicitly elicited, accommodated—or the validity of an enthymeme can be denied.

Reasons

– Answering *q* to 'Why *p*?' indicates that *q* is a reason for *p*.

– Say that *q* is a reason iff there is a valid enthymeme *q* ∴ *p*.

– That is, is a topos licensing *q* ∴ *p*.

– Thus, answering *q* to 'Why *p*?' presupposes that there is such a topos.

– Topoi can be tacitly assumed, explicitly elicited, accommodated—or the validity of an enthymeme can be denied.

(23) a. D: I'm self-funding my campaign, I tell the truth.
      b. J: 'I'm rich, therefore I tell the truth' has[...] no cause and effect between the two.

(from *Last Week Tonight*, Feb. 29th, 2016)

(24)   a. A: Let's walk along Walnut Street
       b.   It's shorter   (cited from Walker, 1996)

It (Walnut Street) is shorter
_____

∴ Let's walk along Walnut Street

Topos: *shorter ways are preferable* (but not all, not always)

An Enthymeme

> (24) a. A: Let's walk along Walnut Street
>   b.   It's shorter
>
> <div align="right">(cited from Walker, 1996)</div>

> It (Walnut Street) is shorter
> _____
>
> ∴ Let's walk along Walnut Street
>
> Topos: *shorter ways are preferable* (but not all, not always)

> (25) a. A: Let's walk along Walnut Street
>   b.   It's shorter
>   c. B: ... and?

Context Structure

- So set up a context structure with:

- Proposals (table)

- Shared common ground (cg)

- Shared question under discussion (qud)

- Shared *enthymeme under discussion* (eud)

- Private beliefs and topoi (that speakers attempt to share).

Speaker A		Shared				Speaker B	
beliefs	topoi	table	cg	qud	eud	beliefs	topoi

– *So (what)?* questions seem to be querying about the validity of an enthymeme.

> (26) a. A: Why didn't you record anything?
> b. B: Er this is my third tape and you've recorded a whole side!
> c. A Yeah, so?
> d. B: Well you're supposed to record as much as you can.
>
> (BNC, KP4, 1738–1743)

– Supposedly, the topos here is *to maximise use of a limited resource, one must ration it*.

Topoi are general

(27)

    a. Charles: Wait, you've owed Terry for years and **now you give him every penny you have**. Why?

    b. Jake: Why? Oh, wait, <u>because$_{LL\%}$</u>.

    c. Rosa: That is not an answer.

    d. Jake: No.

    e. Jake: Well, because (. . .) **you guys got in my head about owing Terry money**

    f. Jake: and it convinced me that **it's important to pay back your friends**.

    g. Rosa: well you owe all of us money, so does that mean you gonna pay all of us back.

    h. Charles: Yeah, Jake, or is there something special about your friendship with Terry?

                                           (Brooklyn Nine-Nine, Season 2, Episode 13)

Formalising it

- We can express reasoning like *whenever A, then typically B* in nonmonotonic logics.
  - → Next week.

- Topoi are then just propositions in a suitable nonmonotonic logic.

- But the really tricky part is recognising when something is an enthymeme.
  - → Answers to *Why*-questions are the easy case.
  - → Cue phrases like *because*, *therefore*, *so* exist.

Recognising Reasoning

– One can recognise reasoning without agreeing with the topos:

(28)   We love freedom—we are against welfare.

(Breitholtz, p.c.)

– It can also be ambiguous what the enthymeme is.

(29)   a. Bush supports big business—he's sure to veto House Bill 1711.
        b. Bush supports big business—[thus] he's sure to veto House Bill 1711.
        c. Bush supports big business—[after all] he's sure to veto House Bill 1711.

(Moore and Pollack, 1992)

If it looks like a duck...

– A pretty robust principle seems to be this:

> ## Suffciency Principle
> All else being equal, if the necessary conditions for a rhetorical connection are given, then this is sufficient to infer that connection.
>
> That is, given propositions *p* and *q*, if there is an available topos that would validate the enthymeme *p* .˙. *q*, then the dialogue should be interpreted to be that enthymeme.

Asher, N. & Lascarides, A. (2003). *Logics of Conversation*. Cambridge UP.

Sufficient Reason

A **reason** for *q* is some proposition *p* such that making *p* and *q* salient makes salient a topos that licenses the enthymeme *p* ∴ *q*.

Sufficient Reason

A **reason** for *q* is some proposition *p* such that making *p* and *q* salient makes salient a topos that licenses the enthymeme *p* ∴ *q*.

– *he's in hospital* and *he's not very well* jointly make salient a topos like *sick people go to hospital.*

(30) a. B: He's in hospital.
   b. C: Why?
   c. B: Because he's not very well   (BNC, file KBF, lines 3394–3396)

Sufficient Reason

> A **reason** for *q* is some proposition *p* such that making *p* and *q* salient makes salient a topos that licenses the enthymeme *p* ∴ *q*.

– *he's in hospital* and *he's not very well* jointly make salient a topos like *sick people go to hospital.*

(30) a. B: He's in hospital.
b. C: Why?
c. B: Because he's not very well   (BNC, file KBF, lines 3394–3396)

– "jointly" matters here.

(31)   a. A: John is not very well.
??b. B: Oh, he is in hospital?

Saliency

– The usual problems with the notion "saliency" apply here.

– In particular, this seems to vary rather strongly with the speaker.

(32)   a. A: I roasted it and we couldn't eat it on the Sunday and
       b. B: Could not? Why could you not eat it?
       c. A: That was bull beef.
       d. B: Oh right.   (BNC, K65, 284–299)

Update Rules

If p is on the table and q is about to be added to the table, and q is a reason for p, then add $q \therefore p$ to EUD.

If *Why p?* is QUD and q is about to be added to the table, add $q \therefore p$ to EUD.

If *so what?* is QUD then an answer is coherent iff it is a topos validating MaxEUD.

Focus and *Why?*

– There is an interesting puzzle that sets *Why?* questions apart from other *wh*-questions.

(33)   a. Why did ADAM eat the apple?
         a.′ Why did Adam eat the APPLE?

(34)   a. When did ADAM eat the apple?
         a.′ When did Adam eat the APPLE?

– Every good answer to (34a) is a good answer to (34b).
  → As predicted by answer-set semantics.

– But this is not so for (33).
  → Since *Why* does not support answer-set semantics.

– Also, the *Why*-questions seem to have different implicatures.

Bromberger, S. (1992). On What We Know We Don't Know. University of Chicago Press.

Monday

- Monday, we'll take a closer look at how intra-sentential relations like "Explanation" or "Reason" can structure a larger dialogue.

- Please take a look at Jasinskaja, K & Karagojosva, E. "Rhetorical Relations", manuscript, University of Köln.