The Grosz-Sidner (86) theory: Discover "rules" of conversation beyond what "look like": "weird" to refer to in (f), "Any way" in (e).

Outline

1. Rules 1: (e)(f) = a "segment" that's "weird" to refer to in (f), "We" of "Any way" in (e).

   - segments look topic-based

   - segments (topic)
   - relations between segments (incoherence if not related)

2. Switch in topic (indicated by "the"): incoherent but not unnatural. (again, parasyn, which act diff. in other langs, but main points about structure still hold.

   interruptions are important to recognize.

   listeners (humans or systems) must recognize (and tolerate) interruptions and possibly act on.

   (topic)

   topic is not enough intentions recognizing intentions is key.
is there a separate tree that's part of associated w/ the discourse individual trees in people's heads?

- can analysis be done in one pass? (i.e., online?)
  - perspective: participant
    - probably often not: as we listen further, we realize our initial interpretation is wrong.
  - perspective: analyst
    - probably not, although "easier" conversations would make it so.

- is metaphor "recognize" a DSP or its fulfillment?
- Grice's maxim of relevance might be related to our attempts to fit things into the intention tree.

- is bystander intervention related to mutual knowledge?
- recognizing whether story is a rhetorical q or not.

DSP1: tell you about Albert being nice but clueless
DSP2: tell you that the book was interesting? Or talking about the book?
  ... what about informing you that the book was late?
  The 'real life' there are non-textual cues to help w/ integrating structure:
  think of how in email misunderstandings are more likely to arise.

q: is 'apparent' a discourse cue, or a "content item" in 1(d)?
Let’s start with some suggestive discourse examples that provided evidence of hidden structure.

Last lecture we looked at some suggestive discourse examples that provided evidence of hidden structure. I want to remind you of this one: used anaphora resolution lens.

1. "Albert...
2. "He...
3. Actually
4. Anyway...
5. They’ve
6. "Why does Speaker B..."

@ first point off describing segment as topic-based

"signal of return to prior topic"

(topic)

"That" or "it in S is "theory"?

(segment)

"talking about Albert"

(next sentence could be about Albert or about the book's arrival."

"signals entry into new topic"

"quarks, (only plural referent)"

"but sounds funny" to be referring to that prior segment "indescribable"
Any other observations from class?

(ask A. to repeat from last time)

see paper on describing role as discourse maker, although broader citation better for analysis.

So what we're observing here:

two points arising here:

- existence of discourse segments
- incoherence when expected segment structure violated

↓

Now, before kind of argued that you wouldn't expect to see a discourse like 2c in real life.

So you might conceive of incoherence as an acceptance criterion.

But incoherent?

But incoherent discourses happen all the time in real life!

And actually, they are not always a bad thing at all.

Consider #4 on handout. I'm picking at this particular incoherent discourse due to the pedagogical point. I'm driving @

- incoherent, b/c
  \[ \text{an interruption} \]
  (and it is an interruption, too)
  (or alternatively the interleaving of two conversations)
  O.K. "Them" would refer to the "kids" (although maybe if the kids are badly enough behaved, you would want to put the kids away).

- incoherent, but normal
  \[ \text{important to be in this case.} \]
  Speaker wants, in some sense, to be incoherent.

If the kids are about to microwave the new puppy, the speaker does not want to wait to finish their gripping tale of the Sage of the Groceries before telling the kids to knock it off.

- listeners (humans or systems) must recognize (adapt to) incoherence.

In this case, presumably the speaker gives a lot of cues so that the listener can pick up on: turning, change in volume,
So, two points so far that a theory of global discourse structure should take into account:
- existence of structural units or segments
- coherence/incoherence (maybe amounts to understanding the relations betw segments.

Now, one more thought-provoking discourse example, this one involving 2 people (finally).

or actually, once you read it, it seems more like one human being and one somewhat flawed AI system.

<read>
- clearly this is a conversation going off the rails
  [bulletproof glass joke from Grishman?]

What's the problem?
B's responses are, from some perspective, totally rational:
  1st response is truthful
  and second utterance by A isn't a q, so B doesn't technically have to do anything,
  but B acknowledges A anyway, which is nice, polite.

Crucially, though, B is failing to recognize A's intentions when making these stunts, and that failure to take attention into account is causing all sorts of hard feelings, one assumes.

So: third elt: importance of recognizing intentions.

After all, perhaps the most important thing to note about conversation is that people generally have them for a reason, (even if those reasons aren't very good).

Grosz, Sidner [1986] theory: has really influenced my thinking when I pay attention to daily conversation.

primary atoms: discourse segment purpose (DSP)
  - a single intention, the recognition of which motivates the discourse segment.

ex in 5: DSPs find out the time
  ☑ check that B knew the time; ☑ test on A.I. system (isn't true)
This explains why A continues the conversation, and does so by rejecting the point. They’re doing another attempt to get their intent recognized. 

DSP relation: DSP1 dominates DSP2 if satisfying the minimal set of

- Contrast of more rhetoric-based theories like “elaboration” “elucidation” “contrast”,
- this kind of relation naturally suggests a tree.

ex: [Jovan Skull Martin] (from back in the day when people called travel agents)

DSP1: caller: agent books flight

DSP2: a: c gives departure

DSP3: a: c gives destination

DSP4: a: c explains which

- note: the intentions of both parties are in the tree.

- also note that this structure is a property of the joint conversation, not necessarily the viewpoint that either participant themselves has.

So the fact that our agendas are what’s interesting makes a lot of sense;
you get the same structure whether or not the caller is a valid customer or, say, someone from a rival company that’s trying to tie up the phone line.

DSP tree structure = embedded discourse segments.

But none of this theory so far explains why some referents seem to somehow disappear.

How to account for?

Well, parse trees relate to pushdown automata, so it’s useful to think of trees being related to stacks.

(Semi-)natural
attentional component:

conversations have a stack of focus spaces, one per discourse segment, contains DSP; salient entities
-explain why there are "missing" or "inconvenient" referents, like "the thing" disappearing.
-erase cognitive load by reducing the # of possible referents you have to look for.

Q: how deep can people's stacks be?

(tt. talk about Walker's quote theory)

Q: do parts of trees stay around beyond boundary of the conversation (i.e., our multiple days)

It's probably true that tree intentions last across sessions, and shared culture keeps some always at the bottom of the stack.

- incoherence: stack doesn't match the tree.

Some implications:

heavers must act: understanding of DSP for speaker to be satisfied.

("closurc": Carl 96, 433-35).

ack can consist of attention

(if I keep staring @ you after D you've told me what time it is this seems weird)

(if you don't look @ me while I'm trying to convey a critical point.)

speakers can close segments w/ acts (thanks, great)

provide next expected contribution (disclaim a compliment, to show you know it was just meant to be polite).

- paraphrasing or repeating

Q: if it's all about getting your DSP recognized, why don't people just 'say what they mean'?

A: b/c there are other factors (and hence intentions) @ play also controlling phrasing.

ex: status, common knowledge.

< show youtube video - from youtube directly. Better bandwidth. >